



SATURDAY, JUNE 1, 1872.

## Smith's Brake for Freight Cars.

The accompanying engraving, for which we are indebted to the *National Car Builder*, illustrates a brake recently invented, which, as the engraving shows, is attached directly to the truck and dispenses entirely with the brake-beam. The brake has been in use for two years, and during the past year more than 3,000 cars have had it attached, with, it is said, excellent success. Simplicity and economy in construction and certainty and uniformity of operation are claimed for it. The patent is owned by the Smith Patent Car Brake Company. The address of the Secretary of the company, Mr. E. B. Hill, is Post-office box 839, New York.

## Locomotive Cylinder Cocks.

We copy from *Engineering* the accompanying engravings of arrangements of locomotive cylinder cocks designed and patented in England by Mr. H. W. Widmark, of Bristol, and in use by the Avon-side Engine Company. *Engineering* describes it as follows:

The object of Mr. Widmark's plans is to do away with all the rods and levers ordinarily employed to work the cylinder cocks from the footplate, and to substitute in their stead a small steam pipe, as we shall proceed to explain. Figs. 3, 4 and 5 show one form of cylinder cock, or rather valve, which he employs. In this case the casing of the valve is bolted to the cylinder cover, as shown, and when it is required to open this valve, steam is admitted to the pipe A by means of a valve on the boiler, conveniently placed for the use of the driver. As soon as steam is thus admitted to the pipe A, it forces the plug B inwards, until it is stopped by its collar, and by this means it moves the valve C from its seat, and allows the water from the cylinder to escape through the opening D. The plug B has segments cut off, as shown in the detached view, so as to give openings through which any water that may form in the pipes can drain away when the steam is shut off. In cold climates it will be necessary to so arrange the pipes that they may be completely drained by the valves, or otherwise trouble may be caused by the water freezing.

Six such valves as that we have just described, namely, two on each cylinder and one on each steam chest, can be opened simultaneously by admitting steam to a 1/2 in. copper pipe which connects them all with a regulating cock on the boiler as shown. Thus, when steam is admitted to this pipe, all the cocks are opened, while when the pressure is removed, the pressure in the cylinder, etc., closes the valves, C. The regulating valve used to control the admission of the steam to, and its release from, the copper pipe, is shown by figs. 6 and 7. Its construction will be readily understood on reference to the figures, and it will be seen that

Figs. 8, 9 and 10 show a slightly modified form of valve which can be screwed into the bottom of the cylinder like an ordinary cylinder cock, and this is a form which will probably usually be preferred to that shown by figs. 3, 4 and 5. Fig. 11 also shows another modification in which the valve is kept closed by the pressure of the steam in the connecting pipe, and is opened when this pressure is relieved. This arrangement may perhaps be applicable in a few cases, but for locomotives we certainly much prefer the plans previously described.

Altogether Mr. Widmark's mode of actuating cylinder cocks is a decided improvement upon the ordinary plans, and it appears to be especially applicable to engines with steam bogies, in the case of which the application of the usual system is attended with some complication. Of course, in the case of such engines the small diameter of the connecting pipe A renders the latter capable of accommodating itself to the movements of the bogies.

## Boiler Explosions.

The following very sensible remarks on this subject are from a letter by Professor Thurston to the *American Artisan*. It will be seen that he attributes boiler explosions chiefly to the fact that they are not strong enough, a conclusion which the world is very slow to accept:

Explosions are, however, much less frequently caused by low water than is generally supposed. Engineers and firemen are too well impressed with the necessity of caution in that respect to allow danger to arise frequently from that cause. It may, nevertheless, be considered a well-established fact, that a boiler, well designed, well built of good material, kept under intelli-

and of iron one-quarter of an inch thick, to carry the very high pressure of one hundred and fifty pounds of steam.

When, however, the law allows a margin of strength much less than is prudent, and prescribes a defective system of inspection, and when engine-drivers and firemen are too poorly paid to bring up the average of skill, intelligence and trustworthiness to a proper standard among them, and particularly when the ability to render political services is considered an important qualification for the also underpaid position of inspector of boilers, we can hardly be surprised that we may read, in the papers issued this morning, of an explosion on the Red River which has killed sixty people, another on the North River destroying six lives, and still another fatal explosion in Massachusetts. Seventy deaths recorded in one day from three different explosions, at points hundreds of miles apart, are a sad commentary upon our laws, and upon the callousness of the public, professional as well as non-professional, in this matter.

English boiler manufacturers put into the shells of high-pressure boilers iron of nearly double the thickness prescribed by our laws.

Our own iron-bridge builders of good standing contract to give their bridges a breaking strength six times the maximum working load. Our law permits, in a case in which a wide margin of safety is far more necessary, in the construction of boilers for steamboats, a factor of safety very much less, and which practically is reduced in old boilers to one and a half, as the strength of the boiler decreases by wear and tear, and approaches the proof pressure applied by the inspector. Where no good engineer would hesitate to recommend a greater factor of safety than that considered proper in bridge building, our law makes it much less seriously less. The board of supervising inspectors of steamboats should properly relieve us of the danger by securing proper legislation; but, although they have already done much, it seems very probable that, attacked by a powerful and interested party, and unsustained by an intelligent and active public sentiment, the good may be undone and further improvement put quite out of the question.

## Cost of the Hoosac Tunnel.

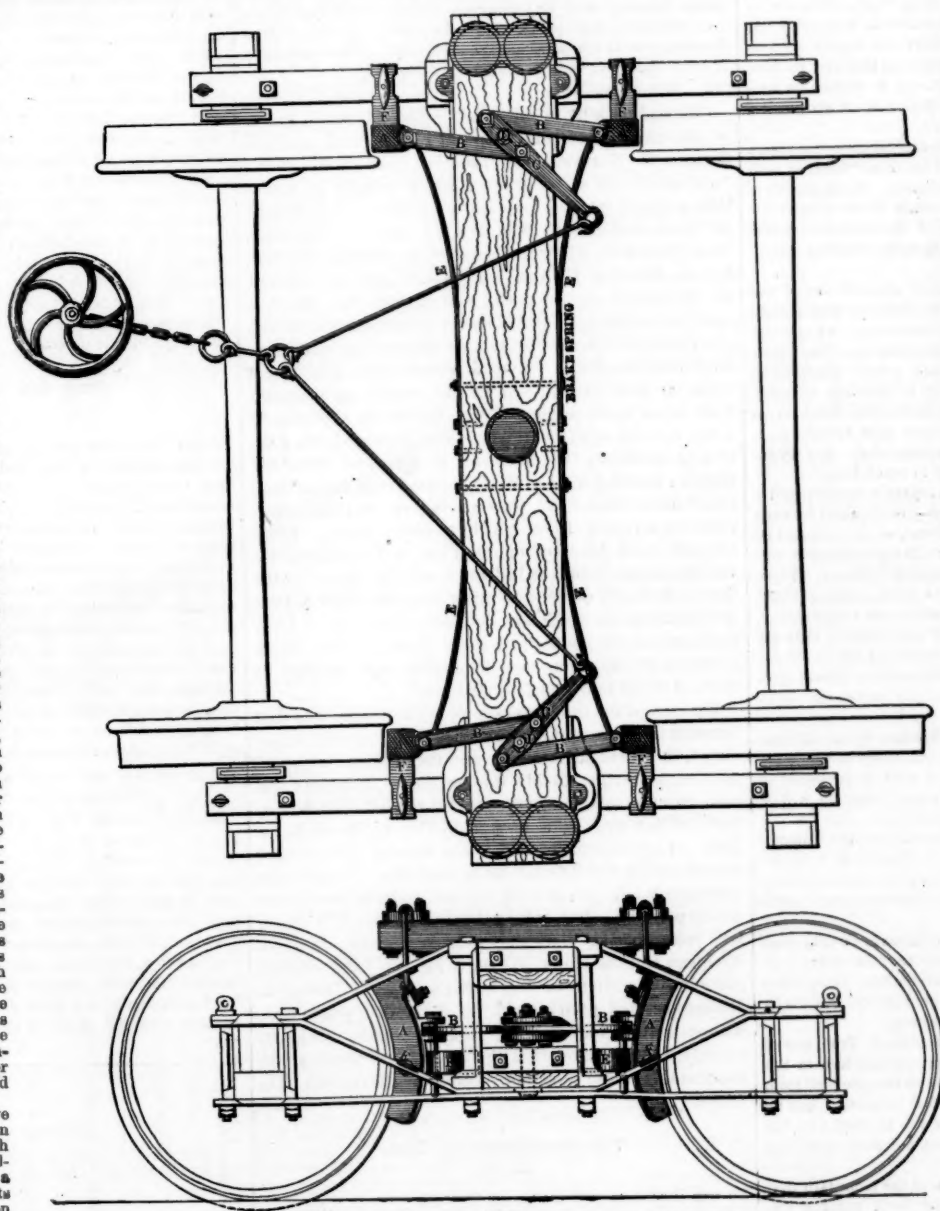
In answer to an order of the House of Representatives, Mr. Endicott, the State Auditor of Massachusetts, sent a communication to the House stating the cost, since the State took possession, and including interest and scrip issued earlier, as \$7,985,501, up to January 1, 1872. This includes \$1,477,005 paid to the Shanlys on their contract; there will be due them \$3,116,362 for work not yet paid for. Adding to this the estimated cost of a railroad from the western portal to North Adams (\$164,335), for engineering and other expenses (\$70,000), for interest and loan to March 1, 1874 (\$1,100,000), for premiums and exchange (\$325,735), and for expenditures ordered, this year (\$30,000), the Auditor figures up a total of \$12,792,234, as the cost to the State up to March 1, 1874. Some deductions are to be made from this for sinking fund, rents, etc., but the amount is not stated, and is not very large. This is the latest, and probably the most exact estimate yet made of the cost of the "great bore," and it is considerably more than the whole cost of the Boston & Albany Railroad.

## Fast Time.

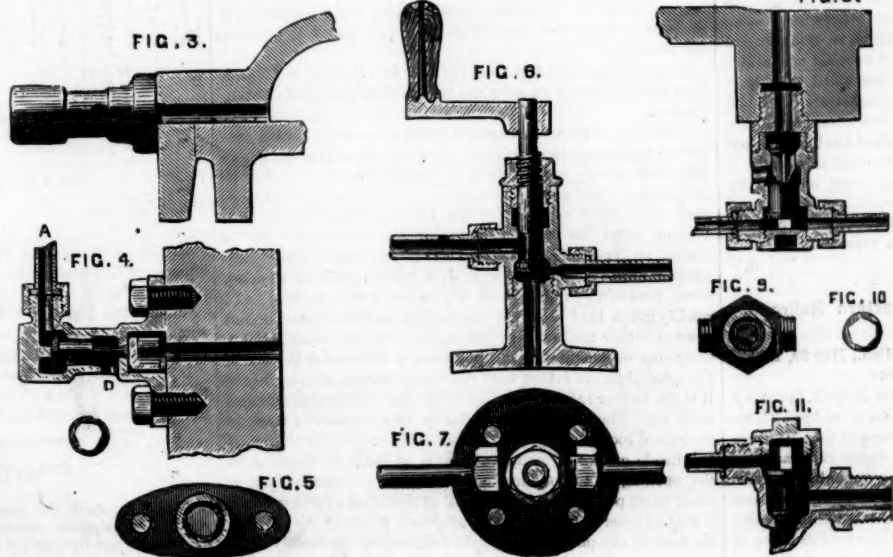
A more detailed statement of the fast run on the New York Central Railroad between Rochester and Syracuse is given in the following paragraph, from a local paper:

"The New York Central Railroad officials who went west through Syracuse returned to New York yesterday. The special train conveying them made extraordinary time. Mr. James Wood was the engineer. He ran from Rochester to Syracuse, a distance of 81 miles in 88 minutes, making one stop of six minutes at Clyde. The train ran 81 miles in 82 minutes. This is absolutely the fastest time for the distance ever made in the United States."

We learn that the locomotive making this run was one built by the Schenectady Locomotive Works in December last. The engine had 16x24 in. cylinders and 5 ft. 6 in. drivers.



SMITH'S BRAKE FOR FREIGHT-CARS.





## Contributions.

## Train Dispatching—Hindoo's system too much for the Wires.

GALESBURG, ILL., May 24, 1872.

TO THE EDITOR OF THE RAILROAD GAZETTE:

In your paper of April 27, I made the very simple statement that 25,000 words of telegraphing is, say, 2,000 words an hour. Imagine my bewilderment when I found in the GAZETTE of May 18 that, by an astounding mathematical process, "Hindoo" had deduced from my humble and insignificant remark the startling result that 25,000 words in twelve hours is, "say, 105 words, or five minutes work an hour!" The mysteries of this man's formula would distract Euler himself. What the twenty stations have to do with the amount of telegraphing that can be done on one circuit in a given length of time, why 20 should be multiplied by 12, or why 25,000 should be divided by 20 are puzzles that would drive a Babbage to despair.

Heretofore I have assumed that these communications were addressed to, and would be mainly read by, those "familiar with the subject" of telegraphic train dispatching. It was hardly to be supposed that "Hindoo" himself would be the first to display such a want of familiar knowledge of the matter, as would necessitate minute and elaborate explanations of trifling technicalities.

In order to economize time and space I selected one of the most obvious and fatal objections to the visionary and absurd scheme which "Hindoo" with majestic assurance, has serenely put forward as his "system" of train-dispatching. This objection was stated in the simplest terms and is here repeated in detail for "Hindoo's" benefit. I will try to dissolve it into a solution volatile enough to ascend even to the lofty height from which that exotic oracle dispenses his dicta upon railroad matters in general and train-dispatching in particular. Any proposition in its entirety would be too heavy to reach him.

According to "Hindoo's" "system" a separate inquiry and a separate message—that is two messages—are required for each train at each station. There are 20 stations, so there would be 40 messages for each train. There are 25 trains in 12 hours; consequently there would be 1,000 messages in 12 hours. These messages will average about 16 words each, making 16,000 words in 12 hours. Add the estimated additional telegraphing, as per my former article, and "Hindoo" will discover that my figures are probably below the truth in showing a total of 25,000 words in 12 hours. This amount of telegraphing cannot possibly be done over one wire in the time and under the conditions stated.

As soon as "Hindoo" demolishes this objection by one of those easy and effortless breaths of inspiration, so many of which are "evolved from his inner consciousness," I shall be prepared to present others in such rapid succession that I fear he will be "out of breath" before I get through with him.

As was distinctly stated in my previous article, the "strong and well-defined safety checks" which I referred to were described by "B" and "X." It would simply be impertinent in me to attempt to recite details that had so lately and so clearly been given by others.

But "Hindoo" is also classical. His mathematics would seem to be crushing enough to satisfy the bloody appetite of the voracious literary Juggernaut; but, no! this relentless being must complete his destruction of my poor unobtrusive article by launching at its devoted head two Latin words.

"Insatiate monster!" would not one suffice? True, one of the words is a singular noun and the other a plural verb in the wrong mood, and neither of them appears in the proverb from which "Hindoo" has made a frantic effort to quote; but he probably knows mysteries of Latin like the mysteries of his mathematics which common mortals may not look upon and live.

If my innocent and much abused article is the mountain that labored, certainly it has thus far brought forth nothing but "Hindoo's" ridiculous reply.

Seriously, it seems to me that "Hindoo" is unfortunate in attempting to establish a system of train dispatching merely by deduction. Few intellects have had the capacity to lay down, bodily, theories so complete as to provide for all conditions that must arise against them. But this is exactly what "Hindoo" has undertaken in train dispatching. He says he is not dealing with details but principles. Where on earth does he get his principles if not from details? He must otherwise possess them by the inherent power of his mind, which is, doubtless, a source of great satisfaction to himself; but he must not be surprised if others decline to apply his principles until they have been tried in the crucible of practical demonstration. Adam Smith or Stuart Mill would hardly have the courage to promulgate a system of train dispatching worked out by deduction only, and they have some reputation as deductive thinkers.

A successful system of train dispatching must be built up upon practical experiences and details; and "Hindoo" will have to learn these details by laborious study and tedious practice before he need expect to cause much of a revolution in train dispatching.

## The Detroit, Owosso &amp; Northwestern Railroad.

FARMINGTON, Mich., May 20, 1872.

TO THE EDITOR OF THE RAILROAD GAZETTE:

In your notice of the organization of the Detroit, Owosso & Northwestern Railroad Company, in your issue of April 27, referring to the proposed route, your statement that "a large part of the route being through a country where railroads are already uncomfortably close together," was undoubtedly made without a full knowledge of the facts, and is calculated, without any intention we presume on your part, to mislead the public. Allow us, therefore, to inform you that the first 32 miles of the route, between Detroit and Milford, runs contiguous

to the Grand River Turnpike, which is one of the great original public thoroughfares leading from the interior of the State to the city of Detroit, and the only one along which the people have never enjoyed railroad advantages. The next 38 miles—from Milford to Owosso—passes through one of the very best portions of our State, where the people have been seeking for years to obtain railroad accommodation, but have thus far entirely failed. It is true, however, that we intersect the Holly, Wayne & Monroe road at Milford, and the Detroit & Milwaukee road at Owosso. For the remaining 150 miles—between Owosso and Frankfort—the country is entirely bare of railroads, except the Grand Rapids & Indiana road, running north to Mackinaw, and the Flint & Pere Marquette, running west to Ludington, both of which may be intersected at the same point. From the above it is evident that the enterprise is not particularly embarrassed by the proximity of other roads "already uncomfortably close together."

Very respectfully,

P. DEAN WARNER.

[We had nothing to say, good or bad, of the character of the country on the proposed route of the Detroit, Owosso & Northwestern Railroad. As to its being "uncomfortably close" to other roads already in operation, a glance at the map and a statement of distances will be more definite. The first 32 miles of the road, from Detroit to Milford, is between the Detroit, Lansing & Lake Michigan Railroad on the south and the Detroit & Milwaukee on the north. At Milford the latter is about ten miles and the former six or seven miles distant, and from that place to Detroit the three lines converge. At Milford the Holly, Wayne & Monroe road, affording a route to both Detroit and Toledo, crosses the proposed route at an acute angle. From Milford to Owosso, 38 miles, the distance from the Detroit & Milwaukee road decreases gradually from ten miles to zero, and from the Detroit, Lansing & Lake Michigan road it increases from six or seven miles to 23, thus leaving on that side a considerable territory from which to obtain traffic. From Owosso to the junction of the Flint & Pere Marquette and the Grand Rapids & Indiana roads the line is for the most part nearly or quite 30 miles from the Flint & Pere Marquette on the north and the Detroit, Lansing & Lake Michigan on the south, and the field here will be ample in extent if the numerous companies now actually at work in it fail to complete their lines.

The part of the line to which we had reference was that between Detroit and Owosso. Besides the roads completed, the Michigan Air Line and the Michigan Midland propose to further divide this territory. The only old road through this territory, the Detroit & Milwaukee, has paid the gross sum of \$223,000 in dividends since 1860. It is true that it has paid the interest on a funded debt of nearly \$40,000 per mile, and that its traffic has been pretty fair—amounting several years to more than \$8,000 per mile. But, taking the district east of Owosso, and remembering that the Detroit, Lansing & Lake Michigan and the Holly, Wayne & Monroe have recently come in for a share of the traffic which the Detroit & Milwaukee had pretty much to itself two years ago, without getting very rich, we not unnaturally held and expressed the opinion that the roads were "already uncomfortably close together."—EDITOR RAILROAD GAZETTE.]

## The Ventilation of Cars.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I note your article on car ventilation in the last issue of the GAZETTE, as well as the communication of "Adams" on the same subject from the car builders. There is no mistaking the fact that there is a vast amount of misinformation (if that is a proper word) on this subject on the part of car superintendents, car builders and the public generally.

Every one knows how common and how easy it is for any quill-driver, riding on a free pass in some gorgeously upholstered car, to puff up the ventilation, among other things, when in all probability it has no ventilation whatever, except by opening the windows.

But your space is limited and my time is valuable, and I propose to state what I consider the only perfect system of car ventilation.

"Adams" is in the main right in his statement; but a system of ventilation that shall be perfectly automatic, is, in my judgment, utterly impossible in a climate like ours, varying in temperature from zero to 90 degrees. If a car is full of passengers, and some of them of the odorous kind, more ventilators must be opened than if it contained only a dozen or two. If the mercury is at zero, fewer ventilators must be opened than with a temperature of 80 or 90. Some reasoning judgment is imperative in the matter, and I readily grant that as a rule conductors and brakemen do not possess either the brains or inclination to look into the subject. Gorgeous ornamentation or upholstery is what takes the eye of the general public rather than reasoning common-sense; hence it is the former rather than the latter that railroad companies cater for. The automatic ventilators now extensively used in the raised roof are as perfect as anything can be, but the registers inside cannot be made automatic, as there are times when the opening of two or three on each side is sufficient, and at other times perhaps half or even all of them must be opened.

It is an utter delusion, in my judgment, to admit the air from the roof in any plan, as the gas and smoke will inevitably come in at times. The plan of admitting the air over the platform is

a mistake, unless there is always a side wind. With the wind ahead, or no wind at all, the gas and smoke will come in. The true point to receive the air is at the side through the frieze, and we should not force it in, but draw it by the exhaustion from the ventilators in the roof.

Let any person observe a train passing on a side hill on which there is no side current to carry off the smoke and gas, and he will see that the smoke will pass along backward on either side of the raised roof, portions of it going in between the cars; but invariably the frieze of the cars will be clear.

If it be questioned whether the smoke will come in between the cars, get out on the platform after a rain storm and note the cinders you will encounter sticking all over the railings and the ends of the car. The contrivances for ventilation now on hundreds of roads are perfect.

Ride in the Washington through-line cars from this city and many others that might be named. One thing more only is wanted, and that is the employment of at least one brakeman on each train of a little higher order of intelligence, with instructions to take care of the ventilators and see that they are properly adjusted to the requirements of the train.

For eight months in the year the system of leaving the perforated plates (that admit the air and exclude the rain) in the frieze and the automatic exhausting ventilators in the dome will require little or no attention; the inside registers may all be left open, without risk of anything. The ventilation of sleeping cars, as a rule, is utterly detestable; the top berths are like an oven, and no traveler of any experience will select them.

This paper is long enough already, and the sleeping cars must be left out for the present.

ENGINEER.

## Frog and Switch Table.

PENTWATER, Mich., May 16, 1872.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I send herewith a frog and switch table, an improvement upon the one of mine you published March 25, 1871. It contains the addition of size of crotch-frogs for all proportions of frogs given, and the distances from heel of switch or the head-block to the point of crotch-frog. I have changed the distances from heel of switch to head-block; as it is more convenient to count from head-block, the switch-rail being given, the distance to the heel is obtained by adding. I never have seen a table given for putting in crotch-frogs, and I think it is something that will meet with favor. Trackmen put them in with a string. I think Huntington in his book proposes that plan. My table calculates all to feet and tenths. I am particular about tenths because the proportions come out right. A practical man will know when to leave off tenths.

C. LATIMER,

Engineer Chicago &amp; Michigan Lake Shore Railroad.

TABLE FOR PUTTING IN ORDINARY FROGS AND SWITCHES, ALSO CROTCH-FROGS AND THREE-THROW SWITCHES.

G = gauge = 4 ft. 8 1/2 in. T = throw or movement of rail, 5 in. P = proportion of frog. F = frog angle. A = degree of curvature. R = radius of curve. O = middle ordinate of curve from heel to point from straight line. D = distance from head-block or toe of switch to point of frog. S = length of switch-rail. P' = proportion of crotch-frog. D' = distance from head-block to point of crotch-frog.

m = 1 foot, in present calculation being the chord of F at distance "1" from point of frog. l = proportion of frog to "m" = distance from point of frog to chord "m." D + S = distance from heel of switch to point of frog.

P.	F.	A.	R.	O.	D.	S.	P'.	D'.
Size or proportion of frog..	Frog angle.....	Degree of curvature.....	Radius of curve in feet....	Middle ordinate of curve in inches.....	Distance from head-block to point of frog, feet.....	Length of switch-rail, feet...	Size or proportion of crotch-frog.....	Distance from head-block to point of crotch-frog, feet...
m 1								
1 to 4	14° 15'	37° 30'	155.6	14	26.4	11.3	1 to 2½	15.1
1 to 5	11 25	28 59	240.5	33.2	14.	1 to 3½	19.2	19.2
1 to 6	9 32	16 48	340.3	34.8	16.8	1 to 4½	23.	23.
1 to 7	8 09	12 19	496.3	46.5	19.6	1 to 5½	26.9	26.9
1 to 8	7 09	9 27	695.8	53.2	22.3	1 to 6½	30.9	30.9
1 to 9	6 27	7 31	792.8	59.8	25.1	1 to 7½	34.7	34.7
1 to 10	5 44	6 07	950.6	66.4	28.	1 to 8½	38.4	38.4
1 to 11	5 13	5 02	1127.	73.1	30.7	1 to 9½	42.4	42.4

$$P = \frac{1}{2} \frac{A + S}{R}$$
$$A = \frac{F}{D + S} \quad R = \frac{50}{\sin. \frac{1}{2} A} \quad O = R - \cos. \frac{1}{2} F$$
$$\sin. \frac{1}{2} F = \frac{1}{2} \frac{m}{1}$$
$$S = \sqrt{R^2 - (R - t)^2} \quad P' = \frac{1}{2} \frac{D' + S}{g}$$
$$l \text{ or } P = \frac{m}{\sin. \frac{1}{2} F}$$
$$D' + S = \sqrt{R^2 - (R - t')^2}$$

In the calculation of this table, the curve begins where it should, at the heel of the switch, the switch-rail forming part of the curve.

Should the iron be heavy or the switch-rail short, a stop should be put in a heavy tie in the centre of the switch-rail, so that the rail will curve around it.

It will be observed that the distance from the points of the two frogs of a three-throw switch to the point of the crotch-frog is always equal to the length of the switch-rail exactly.

## Changeable Headlight.

The Erie and the Delaware, Lackawanna & Western roads are using on some of their engines a headlight so arranged that by simply pulling a rod in his cab the engineer can change the light from white to red.



**"Conoquenessing" and "Hindoo."**

TO THE EDITOR OF THE RAILROAD GAZETTE:

Conoquenessing" in your issue of May 11 has misrepresented, unintentionally no doubt, my remarks regarding "through trains." I did not "mention the New York Central route as being frequently delayed, compelling passengers to lay over in dirty depots, etc." I mentioned the Great Central Route merely as an example of a route consisting of a number of independent roads combined for the purpose of giving facility to through travel. My remarks were general and not intended to apply to any particular road. In fact, Mr. Editor, the gentleman came round on your blind side and popped in an advertisement.

May I trespass a little more on your space to return thanks to "Conoquenessing" for his kind invitation to travel over the Pennsylvania roads. Passes sent to your care will, I know, be forwarded to me, and will be taken advantage of with pleasure to take notes, mark, learn, etc.

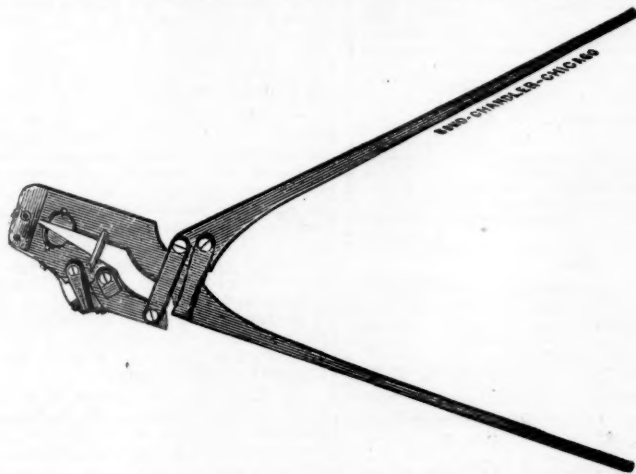
May 14, 1872.

HINDOO.

**Budd's Stay-Bolt Cutters.**

After the stay bolts are screwed into locomotive fire-boxes, it is necessary to cut them off to the proper length, and leave just the required amount of material for riveting them. There are two objections to doing this with an ordinary hammer and chisel: First, it takes a great deal of time, and second the bolts are liable to be loosened, and consequently leak in the holes.

The tool represented by the engraving is designed to obviate these difficulties. As will be observed, it is arranged so that a powerful pressure can be exerted on two steel cutters which



grasp the stay bolt at the point where it is to be cut off. The tool is then operated in a similar way to an ordinary pipe-cutter.

We have before us letters from parties who have used this implement. A practical boiler-maker says that two men can cut off the stay-bolts of a locomotive fire-box in four hours, which is one-third the time usually required by the old process. We have seen its operation and are satisfied of its usefulness, and that better work can be done, and in less time, than by the old process.

This tool is manufactured by Jenks & Van Vleet, who have appointed Mark McGlenn as their agent. He can be addressed at Aurora, Ill., Post Office Box 348.

**The Amalgamation of the Central Railroad of New Jersey, and the Delaware, Lackawanna & Western.**

Some time since it was announced that an arrangement equivalent to a consolidation had been made between the Delaware, Lackawanna & Western, and the Central Railroad of New Jersey, whereby they and their leased lines are to be worked together hereafter. The following copy of the articles of agreement is given as a postscript to the recent report of the Central Company.

*First.*—That from and after the date hereof, the entire railroads, properties and interests now held by said companies, whether as owners, lessees or otherwise, and also all railroads, properties and interests hereafter by either or both of said companies built or acquired, shall be forever operated and managed as a joint estate, and under the joint management hereinafter provided for; and that upon the capital stock of the said companies, which has been and may hereafter be issued, equal dividends shall be forever paid; and that the entire receipts of every kind and description whatsoever of both of the said companies, including all moneys which may be received for new stock and bonds issued, or for assets or other property disposed of, shall be deemed and regarded as joint receipts, and the entire expenses of both of the said companies shall be deemed and regarded as joint expenses; and that out of the said joint receipts the said joint expenses, and all the other debts and liabilities of both of the said companies, shall, as and when they become due, be paid, and the surplus shall be disposed of in such manner as shall be jointly directed; and if at any time the joint receipts be insufficient to pay the joint expenses, and other matured debts and liabilities, the deficit shall be jointly provided for.

*Second.*—That the ordinary and current business of each of said companies shall continue for the present to be managed and controlled by their respective board of officers, subject to the general direction of the Joint Committee hereinafter provided for.

*Third.*—That for the present the President and five of the directors of the said Central Railroad Company of New Jersey, to be named by that company, and the President and five of the managers of the said Delaware, Lackawanna & Western Railroad Company, to be named by that company, shall be, form and constitute a Joint Committee for the management and control of the business, property and interests which by this agreement are consolidated and united. The said committee-men shall hold their offices for one year, and

until others are appointed in their stead, and in case a vacancy shall occur, it shall be filled by the company that named the retiring committee-man. The members of the said Joint Committee shall appoint a chairman and any other officers deemed necessary; any seven members of said Joint Committee shall constitute a quorum for the transaction of business.

*Fourth.*—That regular monthly meetings of said Joint Committee shall be held, at which the doings and proceedings of the respective boards of directors and managers, and of their executive committees, shall be submitted for revision and approval; and the directors, managers and officers of the said companies shall, respectively, do and perform all such legal acts and things as the said Joint Committee shall request.

*Fifth.*—That the purposes and objects of this agreement are to effect an equal and perpetual union of interests between the parties hereto; and for that purpose it is hereby declared to be the intention of said companies, whenever and as soon as the same can be effected, to consolidate as fully as possible their capital stock, property and assets, to the end that the management of the same may be simplified and rendered more efficient and the purposes of this agreement more fully carried out.

*Sixth.*—This agreement shall be perpetual, and shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto, respectively; but the parties hereto shall, from time to time, execute such further and other agreements as in the opinion of the said Joint Committee may be necessary to give perfect effect to the purposes and objects of this agreement.

The following comment on and recommendation of these articles is made by the directors of the Central Company:

This agreement is so simple that no explanation of it is required. It contemplates equal dividends on the two stocks out of the joint earnings, leaving at present officers, boards and general organizations undisturbed, while a joint committee watches over the joint interests, and acts as a balance wheel to the concern. In process of time a much closer consolidation is contemplated, and such steps as are feasible will be taken towards it from time to time. Very great advantages in business, in economy of management, and in future safety, are expected to result from this important measure, the expediency

of which became so evident on both sides that the decision was arrived at unanimously.

The drawbacks were considered to be—1st, the great cost of the Morris & Essex Railroad, leased at 7 per cent.; and, 2d, the broad gauge of the Lackawanna road, which is admitted to be undesirable, necessitating a heavy expense in changing road and equipment to the narrow gauge. Against the losses involved in these two items are to be set the 25,000 acres of valuable coal lands owned or controlled by the Delaware, Lackawanna & Western Railroad Company—the value of which is put at from \$15,000,000 to \$20,000,000, while the cost to the joint concern is not more than \$5,000,000, including improvements. Considering this as fairly balancing the first two, the collateral advantages of the union are left as clear gain. It is also proper to say that it is understood that the Morris & Essex now very nearly meets, out of its earnings, the annual rent, as well as the cost of maintaining and running it.

The mileage of road practically brought under one management is very great, and is substantially as follows:

Central of New Jersey and branches.....	106 miles.
Morris & Essex and branches.....	131 "
Lehigh & Susquehanna and branches.....	185 "
Delaware, Lackawanna & Western.....	145 "
Lackawanna & Bloomsburg.....	80 "
Binghamton & Utica.....	98 "
Syracuse & Oswego.....	80 "
Binghamton & Syracuse.....	35 "
Cayuga & Susquehanna.....	33 "

Total..... 893 miles.

Much of the distance is double tracked, and all of it is calculated for the development of a large and harmonious business.

The capital stock of each of the two contracting parties happens to be nearly the same, \$20,000,000.

The capacity of the joint concern for coal traffic is almost unlimited, and the quality and variety of the coal controlled, from the hardest anthracite to the free-burning, is unsurpassed.

The step taken is a most important one, and will require, now or later, the assent of the stockholders, and the directors have no hesitation in recommending that it be given.

**Report of the Central Railroad of New Jersey.**

The Central Railroad of New Jersey extends from Jersey City westward across the State of New Jersey to the Delaware River at Phillipsburg, 74 miles, with a branch (leased) from Somerville (36 miles from Jersey City) southwest to Flemington, 15 miles, the leased Newark & New York Railroad from Jersey City to Newark, 8 miles, a branch connecting the latter line with the Central near Elizabethport, 7 miles, and a branch to Elizabethport, about two miles. Its entire mileage is thus 106 miles in the State of New Jersey. Since April 1, 1871, it has operated the Lehigh & Susquehanna Railroad and branches, 185 miles in all, as follows: Main line, Easton (opposite Phillipsburg), to Green Ridge (two miles beyond Scranton), 121 miles; Nanticoke Branch, from Wilkesbarre (100 miles from Easton) southwest to Wanamie, 12 miles; the Nesquehoning Valley Branch, from Mauch Chunk (46 miles from Easton) west to Tamaqua, 18 miles; the Lehigh & Lackawanna Branch, from Bethlehem (12 miles beyond Easton) northward to Chap-

man's, 15 miles; the Nescopee Branch, from White Haven (71 miles from Easton) west to Upper Lehigh, 9 miles; and the Mauch Chunk, Summit Hill & Switch Back Railroad, from Mauch Chunk west to Summit Hill and back, 11 miles.

From the report of the directors for the year 1871 we make the following extracts:

**SERVICE OF THE ROAD AND FERRY.**

The service of the whole road, as compared with that of the Central Division the previous year, has been as follows:

	1871.	1870.	Increase.
Miles run by passenger trains.....	1,164,833	875,049	289,784
" " merchandise trains.....	308,735	574,308	265,573
" " coal trains.....	1,536,905	828,971	707,934
Total by transportation trains.....	3,010,473	2,278,328	732,145
Miles run by wood, gravel and construction trains.....	171,850	66,817	105,033
Total miles run by trains.....	3,182,323	2,345,145	837,178

The ferry boats have made 39,993 trips between New York and Jersey City, against 36,336 trips the previous year. The ferry between New York and Elizabethport has been regularly kept up.

**PASSENGERS, FREIGHT AND COAL.**

The passenger business of the past year, including that of the Lehigh road for nine months, is as follows, compared with Central Railroad receipts the previous year:

	1871.	1870.	Increase.
Number of passengers.....	3,944,103	3,291,034	653,069
Miles traveled by passengers.....	44,808,654	40,490,888	4,317,766

A similar comparison of merchandise business gives as follows:

	1871.	1870.	Increase.
Number of tons carried.....	990,591	708,529	282,062
Tons carried one mile.....	59,537,173	42,792,171	16,745,002

A similar comparison of the coal business gives the following results:

	1871.	1870.	Increase.
Number of tons carried.....	2,958,046	2,053,184	904,862
Tons carried one mile.....	229,342,945	115,804,381	113,538,564

There was an increase in Lehigh coal of 247,494 tons, and a decrease in Lackawanna coal of 422,614 tons, on the Central Division.

**EQUIPMENT.**

The company received with the Lehigh & Susquehanna Railroad 72 engines, 15 passenger cars, 10 baggage cars, 554 freight cars, 10,442 coal cars and 263 other cars.

The company now own 202 engines, of which 193 burn hard coal and 9 wood. The condition of these engines is reported as follows: 134 in first-class order, 31 in good working order, 1 requires ordinary repairs, 6 general repairs, and 22 are now in shop repairing. During the year 9 new passenger engines, 4 new freight and 5 new shifting engines have been added to the equipment, besides the purchase of the Lehigh engines. Six engines have been condemned and cut up.

The equipment of cars is as follows: 103 first-class passenger cars, 16 second-class cars, 29 baggage and smoking cars, 10 baggage and mail cars, 3 express cars, 326 8-wheel house freight cars, 13 4-wheel house freight cars, 28 8-wheel stock cars, 9 8-wheel caboose cars, 73 4-wheel caboose cars, 198 8-wheel platform cars, 311 8-wheel gondola cars, 10 8-wheel iron and lime cars, 149 8-wheel iron and lime cars, 14 4-wheel iron and lime cars, 876 8-wheel coal cars, 11,975 4-wheel coal cars, 122 8-wheel gravel cars, 163 4-wheel gravel cars, 10 6-wheel wood rack cars, 5 4-wheel wood rack cars, 4 8-wheel derrick cars, and 2 8-wheel tool cars.

During the year the following additions have been made to the car equipment, beside the Lehigh car purchase: There have been purchased 10 passenger cars, 1,000 4-wheel coal cars, 50 gondola cars, 12 house cars, 25 platform cars and 48 iron cars. There have been built in the company's shops 1 caboose, 43 house, 7 stock, 24 platform, 6 gondola and 2 tool cars, all 8-wheeled; also, 8 4-wheeled caboose and 43 4-wheeled coal cars. The following changes were made: 3 second-class passenger cars were converted to combination cars, 2 6-wheel wood racks to iron and lime cars, 1 8-wheel coal car to work train caboose, and 10 8-wheel coal cars to lime cars. Also 180 4-wheel cars were rebuilt during the year. Also 5 passenger cars, 2 caboose, 69 coal, 1 stock and 9 lime cars have been broken up or destroyed.

**TRANSPORTATION ACCOUNT.**

The following is a statement of the ordinary receipts and expenses of both roads for the year 1871, compared with those of Central Division in 1870:

	1871.	1870.	Inc. or Dec.
<b>RECEIPTS.</b>			
Passengers.....	\$1,275,091 83	\$1,118,147 30	\$156,944 53 Inc.
Merchandise.....	1,562,847 54	1,173,850 63	388,996 91 "
Coal.....	3,990,371 71	1,984,550 36	1,995,821 35 "
Mail.....	15,809 90	15,772 40	37 50 "
Express.....	28,429 55	28,756 10	326 55 Dec.
Rents.....	25,516 49	80,900 36	55,383 87 "
Miscellaneous.....	17,424 59	22,486 87	5,062 28 "
Car Service.....	15,587 59	.....	15,587 59 Inc.
<b>Total receipts.....</b>	<b>\$4,841,579 19</b>	<b>\$4,293,514 13</b>	<b>548,065 06 Inc.</b>
<b>EXPENSES.</b>			
Running expenses.....	\$1,365,035 94	\$799,906 85	\$565,129 09 Inc.
Wood consumed.....	46,619 75	47,981 66	1,361 91 Dec.
Coal consumed.....	281,817 33	240,117 13	41,700 20 Inc.
Repairs of road.....	896,985 97	408,522 17	488,463 80 "
Repairs of engines.....	350,388 92	216,311 73	134,077 19 "
Rep'r passenger cars.....	68,717 29	39,657 05	29,060 24 "
Repairs freight cars.....	51,605 52	23,150 99	28,454 53 "
Repairs of coal cars.....	225,240 84	40,705 50	184,535 34 "
Rep'r docks, Ellis' p't.....	10,503 84	30,363 13	19,859 29 Dec.
Repairs of buildings, bridges, etc.....	178,047 87	175,486 23	2,561 64 Inc.
Repairs of tools and machinery.....	34,639 47	18,875 89	15,763 58 "
Expense account.....	121,323 14	103,811 10	17,512 04 "
Miscellaneous expenses.....	71,979 59	105,341 58	33,361 99 Dec.
Ferry run'g expenses.....	88,995 50	106,556 33	17,560 83 "
Ferry boat repairs.....	34,895 07	41,995 62	7,099 55 "
Car service.....	.....	126,654 68	126,654 68 "
Exp'r Ashley Plains.....	68,878 04	.....	68,878 04 Inc.
<b>Total expenses.....</b>	<b>\$2,706,144 48</b>	<b>\$2,512,216 64</b>	<b>\$193,927 84 Inc.</b>
<b>Balance net earnings.....</b>	<b>2,135,434 71</b>	<b>1,881,297 49</b>	<b>254,137 22 "</b>

The gross receipts per mile run have been as follows: From passenger trains, \$1.09 against \$1.28 in 1870; from merchandise trains, \$1.93 against \$2.04; from coal trains, \$2.55 against \$2.36. The average receipts per mile run from all trains have been \$1.85 against \$1.87 the previous year.

The gross expenses per mile run have been \$1.00 against \$1.07 the previous year.

The cost of the Central Railroad, double tracked, with its ferry houses, ferry boats, coal wharves, station houses, shops and other appendages, stands at \$11,736,639.19, and that of the equipment of both roads at \$6,891,559.48.

**BUSINESS OF THE YEAR.**

For the first quarter of the year the coal traffic was almost entirely suspended by the universal strike in the coal regions. When trade commenced, simultaneously with this company taking possession of the Lehigh & Susquehanna Railroad and branches, under the lease on the first of April, a very heavy



business at remunerative prices was done for a number of months. The latter part of the year prices fell, under a severe competition among producers and transporters to get large quantities to seaboard. The year closed with very satisfactory results however, the receipts from coal on the Central having slightly exceeded those of the previous year, notwithstanding the above drawbacks, and notwithstanding the fact that the receipts of the previous year had been exceptionally large.

Passenger and merchandise receipts showed also a large increase on the Central Division, while the business of the Lehigh & Susquehanna Division, under the stimulus of passing into hands able and willing to increase its traffic, has largely developed, and shows a healthy growth likely to increase.

The division of the business between the two roads has been as follows:

	Central.	Lehigh & Sus.	Total.
Passengers.....	\$1,134,829 42	\$141,263 40	\$1,276,092 82
Merchandise.....	1,374,927 06	288,021 48	1,662,948 54
Coal.....	1,900,026 54	1,940,545 17	3,840,571 71
Other receipts.....	100,946 72	1,821 40	102,768 12
Total.....	\$4,470,729 74	\$2,370,649 45	\$6,841,379 19

#### CONSTRUCTION.

The graduation and masonry for the third and fourth tracks between Elizabeth and Somerville, generally of an easy character, was carried on during the season, and is now nearly completed, ready for laying the new tracks where required, and correcting the old ones where out of the true line. The new pieces of road to straighten the line between Fanwood and Plainfield is progressing very satisfactorily. The right of way for the tangent line between Somerville and Raritan has been purchased, but work has not yet been commenced on it; so also on the Bound Brook part of the line, where the present tracks require raising two feet, and the filling in of the new tracks is heavy, no work has yet been done.

A third coal wharf is building at Port Johnston, and nearly ready for occupation. Another wharf is almost completed at Jersey City, and the adjoining wharf is to have a coal trestle placed on it for city and harbor trade.

Extensive but not expensive improvements have been made at Roselle and Dunellen stations, and neater and more ornamental stations and grounds are not to be found in the country. It is intended by degrees to improve all the stations, on different plans, as required by the extent and nature of the ground, and by the enterprise shown by the inhabitants.

A large and handsome station-house, of iron and brick, has been built at Ferry street, on the Newark road, and already the effect is visible in the start given to improvements in the neighborhood. The stores on the ground floor at once pay the interest on the cost of the building.

The filling in at Jersey City, partly on the lands of the company and partly on those of the American Dock and Improvement Company, has advanced very satisfactorily. Two connections with Jersey City, by Jersey avenue and Washington street, have been filled in, and for use await only the building by Jersey City the necessary bridges over the Morris Canal, &c. These bridges are understood to be ready for contract.

The bulkheads sunk round the large basin north of the station grounds have been further protected by additional stone ballast. This basin when completed will be an advantage which Jersey City would not lose for a large sum, and the Dock Company propose to proceed with its construction with the addition of two smaller basins to the north, at right angles with main basin.

#### STEEL RAILS.

The relaying the road with steel rails is steadily advancing month by month. On the 1st January 4½ miles single track had been relaid, and the rails for 12 more miles were on hand. Orders for 15 miles more were in the course of delivery. On the Lehigh & Susquehanna road over 10 miles were laid. The total will be 6,000 tons. For the present year, in addition to the above, 8,500 tons have been ordered, sufficient to relay 85 miles of road. It is gratifying to add that the steel rails have continued to give perfect satisfaction, and also that the iron rails recently received from our American works, where not composed of re-rolled iron, have been lasting much better and promise much more satisfactory results than those received for a number of years previously. The company will continue to relay with steel until the main tracks are all changed.

#### COAL LANDS.

In the general competition for sources of coal supply, it became indispensable for the company to place this, their most important branch of traffic, beyond the reach of contingency of any sort. They, therefore, took active steps during the past year to secure coal lands in their interest, giving the preference to the very best lands, even if higher priced, and also securing large contiguous blocks rather than scattering their interests. By purchase or lease, through the Lehigh Coal & Navigation Company or otherwise, they own the fee or control the traffic of 21,500 acres of the best coal lands in the Lehigh and Wyoming coal fields, besides 14,000 acres of timber or arable lands under which no coal is as yet known to exist. This statement includes the lands of the Lehigh Coal & Navigation Company, but not those of the Lehigh Valley Railroad Company, or of the Delaware, Lackawanna & Western Railroad Company. With such a body of lands to be certainly relied on, they feel as if they were in no danger, and driven to no particular course which they might not otherwise take.

#### NEWARK & NEW YORK RAILROAD.

There is nothing new in the business of this branch, which continues to grow in popular favor. The reduction of grade through Bergen Hill to 30 feet to the mile is advancing satisfactorily.

The branch across the meadows, from the Central road near Elizabethport to the Newark road on the Brill farm, is completed and ready for use. No trains have been run over it during the winter, it being more economical to wait until the frost is out of the ground and surface the road properly before beginning its use. It is expected to give great impetus to the Newark passenger business on the Central road, as through cars will be run in connection with all the principal trains.

#### ROAD TO PERTH AMBOY AND LONG BRANCH.

Roads have been chartered extending from the junction of the Newark Branch and the Central road at Elizabethport, directly across a level, inexpensive country to Perth Amboy; thence by a double-track bridge across Raritan Bay to South Amboy, and thence by tangent lines passing through Mattawan and Red Bank to Long Branch. At present these roads are independent of the Central, but they will pass under their control.

The "all-rail" distance from New York to Long Branch will be 45 miles. The country is rich and anxious for an outlet, and the business is expected to be remunerative on its cost, which will be very moderate.

The bridge across Raritan Bay is the only costly structure, and will be constructed in a permanent manner, as it will, in time, become the channel of a large business.

#### LEHIGH & SUSQUEHANNA RAILROAD.

This road has been worked, for nine months of the fiscal year, as a division of the Central road, to the great advantage and profit of both parties. Possession was taken without difficulty or jar of any kind, and the business operations of the road have been eminently satisfactory and harmonious. The construction of the second track between Easton and Allentown, and also at the most important points on the upper part of the road, has been steadily and economically pushed, and many miles will be

added during the present season. The new portions of track, like the older, will be laid with steel rails, now under contract; station-houses will be built, sidings and freight-houses provided, moderate rates of toll maintained, and everything possible done to develop and expand the business. The Central policy will, as far as possible, be extended into Pennsylvania, and already the good effects are visible.

#### STOCK AND BONDS.

During the year an addition to the capital has been made by the issue of \$5,000,000 scrip stock, on which \$1,182,150 had been paid at the close of the year. When this is all paid in, it will make the capital stock twenty millions of dollars. The issue of new bonds, due 1890, is \$4,824,000, while the old bonds outstanding are \$176,000, making together five millions. Of floating debt, as usual, there is little or none.

#### DIVIDENDS.

A semi-annual dividend of 4 per cent. was made, then a quarterly dividend of 2½ per cent., and then one of 3½, to make the dividends of the year up to 10 per cent.; at which point of 10 per cent. it is expected to maintain them.

#### CONCLUSION.

There seems little prospect of any check to the prosperity of the road. The country along the line is flourishing greatly. Business is flowing in, and while competition is from time to time threatened, or branches of business withdrawn, new sources of supply are always ready to take the vacant places.

#### BALANCE SHEET.

##### Debtor.

Railroad:		
Grading.....	\$2,360,914 80	
Masonry.....	915,167 60	
Railway superstructure and ballast.....	3,124,297 59	
Bridge superstructure.....	547,846 25	
Land damages.....	671,997 86	
Engineering.....	178,908 42	
Interest charged to construction.....	431,539 62	
		\$8,231,072 14
New York station and Ferry houses.....	314,556 21	
Jersey City Station.....	140,297 50	
Port Johnston Coal Station.....	752,910 88	
Elizabethport Station.....	300,146 10	
Station houses, shops and water stations.....	573,610 26	
Ferry interest and boats.....	514,046 10	
Engines.....	2,314,063 30	
Freight cars.....	778,000 31	
Coal cars.....	3,269,921 97	
Land accounts.....	\$365,776 89	
Coal lands—interest.....	847,600 00	
Machinery and miscellaneous property.....	335,940 28	
Telegraph.....	12,297 34	
		\$1,511,604 49
American Dock and Improvement Co. stock.....	1,500,000 00	
Newark and New York Railroad Co. stock.....	750,000 00	
Chairs, spikes, steel and iron rails and ties on hand.....	376,748 05	
Materials and fuel on hand.....	331,221 26	
Cash and accounts receivable.....	2,077,043 22	
Total.....		\$25,194,815 69

##### Creditor.

Capital stock.....	\$15,000,000 00
Scrip stock.....	1,182,150 00
Mortgage bonds of 1890.....	4,824,000 00
Mortgage bonds due 1870 and 1875.....	176,000 00
Lehigh Coal & Navigation Co. loan of 1897 (assumed).....	2,310,000 00
Railroad Car Trust of Philadelphia (assumed).....	498,568 76
Interest on bonds; accrued, not yet due.....	164,464 50
Accounts payable.....	873,476 81
Renewal fund.....	106,155 62
Total.....	\$25,194,815 69

## General Railroad News.

### ELECTIONS AND APPOINTMENTS.

The sub-committees of the Governing Committee of the New York Stock Exchange have been reorganized as follows: Finance Committee—Alfred Colvill, Chairman; W. B. Clerke, A. B. Baylis, the President and Treasurer. Committee of Arrangements—G. L. Haight, Chairman; J. L. Brownell, W. K. Soutter, S. T. Russell, A. A. Drake, F. White, S. Barton. Committee on Admissions—W. Seymour, Jr., Chairman; George W. Fuller, W. K. Soutter, H. G. Chapman, G. W. M. Lean, John Ten Brook, J. R. Garland, W. S. Nichols, G. H. Broadhead, J. T. Denny, H. S. Wilson, G. L. Haight, A. M. Cahoon, J. B. Norris, F. White. Committee on Securities at Large—Edward Brandon, Chairman; J. Benjamin, Warren Kimball, M. L. B. Martin, W. E. Strong. Committee on Government Securities—S. T. Russell, Chairman; W. E. Strong, H. E. Dodge, C. M. Stead, D. B. Hatch. Committee on Stock Lists—A. D. Williams, Chairman; A. S. Peabody, A. B. Baylis, A. M. Cahoon, P. M. Myers. Arbitration Committee—Alfred Colvill, Chairman; G. H. Broadhead, E. S. Munroe, R. L. Cutting, Jr., J. K. Warren, H. S. Wilson, R. Manley, C. M. Stead, P. M. Myers. Committee on Law—John T. Denny, Chairman; Warren Kimball, R. L. Cutting, Jr. Committee on Commissions—G. A. Fanshawe, Chairman; Samuel Barton, H. H. Hollister. Committee on Printing—A. M. Cahoon, Chairman; D. B. Hatch, John Ten Brook.

Major George C. Hopper, of Jackson, has been appointed General Superintendent of the Jackson, Lansing & Saginaw Railroad, in place of A. Watson, who has accepted the superintendency of the Detroit & Milwaukee road. Major Hopper was Station Agent at Jackson for the Michigan Central, and is succeeded by Stephen H. Babcock.

On the 16th of May the old board of directors of the Maysville & Lexington Railroad Company, Northern Division—L. H. Long, W. H. Cox, J. Wallingford, J. S. Darnald, T. S. Parks, D. Hibler and A. McClintock—were re-elected by a unanimous vote. The directors re-elected the old officers—J. H. Hall, President; W. C. Sadler, Secretary and Treasurer; T. J. Glenn, Chief Engineer and General Superintendent; W. G. Sanborn, Assistant Superintendent and General Freight Agent.

At a meeting of the stockholders of the recently organized New Orleans, Little Rock & St. Louis Railroad Company, held at Little Rock, Ark., May 11, Tom P. Dockery, David Snow, M. M. Duffie, Henry Page, James Lawson, J. F. Fagan, J. N. Smithee were elected directors. The directors subsequently met and elected Tom P. Dockery, President; Gordon N. Peay, Secretary; D. F. Shall, Treasurer; R. C. Newton, Attorney.

At a meeting of subscribers to the capital stock of the Toledo & Southwestern Railroad Company, held in

Toledo May 15, the company was organized by the election of a Board of Directors, who chose the following officers: President, Dr. T. M. Cook; Vice-President, F. J. Boutwitz, of Van Wert; Secretary, C. T. Wales. Messrs. Cook, J. J. Voorhees, of Grand Rapids, and Scott were appointed an Executive Committee.

At the annual meeting of the Augusta & Hartwell Railroad Company in Augusta, Ga., May 21, the following were chosen directors and officers: John Thompson, John L. Wilkes, John D. Butt, James Hope, Robert H. May, E. Lockhart, James A. Clarke, Thomas A. Barksdale, N. A. Crawford, Nathan Bussey, James A. Edwards. Dr. John L. Wilkes was elected President; James Hope, Treasurer, and Charles R. Abbott, Secretary.

At the annual meeting, May 15, in Cedar Rapids, Iowa, the Iowa Railroad Land Company chose the following directors and officers: Directors—John B. Alley, Lynn, Mass.; Oakes Ames, North Easton, Mass.; John I. Blair, Blairtown, N. J.; D. C. Blair, Belvidere, N. J.; Prince S. Crowell, East Dennis, Mass.; Wm. T. Glidden, Boston, Mass.; Edward Johnson, Belfast, Maine; Charles A. Lombard, New York; Joseph Nickerson, S. Lothrop Thorndike, Boston, Mass.; James Van Deventer, Horace Williams, Clinton, Iowa; James F. Wilson, Fairfield, Iowa. Officers—James Van Deventer, President; Horace Williams, Vice-President; George F. Crandell, Secretary; John M. S. Williams, Treasurer; James Van Deventer, Assistant Treasurer; Charles H. Clark, Register of Lands; William P. H. Means, Register of Stock; P. E. Hall, Auditor; John B. Calhoun, Land Commissioner. Executive Committee—James Van Deventer, John I. Blair, Joseph Nickerson, Horace Williams, William T. Glidden.

At the annual meeting of the Iowa Railroad Contracting Company in Cedar Rapids, Iowa, May 15, the following directors and officers were chosen: Directors—John I. Blair, Blairtown, N. J.; Prince S. Crowell, East Dennis, Mass.; Wm. T. Glidden, Boston; C. A. Lombard, New York; Frederick Nickerson, Boston. Officers—C. A. Lombard, President; P. E. Hall, Secretary; John M. S. Williams, Treasurer; Geo. T. Crandell, Auditor.

At the recent meeting of the subscribers to the stock of the New Castle & Franklin Railroad Company, the resignation of Springer Harbaugh, Vice-President of the company, was tendered and accepted, and by a unanimous vote George C. Reis, Esq., of New Castle, was chosen Vice-President to fill the vacancy. The resignations of J. W. Blanchard, Samuel M. Keir, William Harbaugh, D. M. Courtney, William Patterson and G. W. Crawford, directors of said company, were also severally tendered and accepted. Hon. William Seward, Johnson Pearson and Valentine Zmizer, of Mercer, and George V. Boyles, I. N. Phillips and Samuel McDowell, of Lawrence County, were appointed to fill the vacancies. A. Vandivort, of Lawrence County, was appointed Chief Engineer of the company.

J. T. Smith, J. P. Harper, W. R. Spears, L. Lindsay, P. Casey, John Hartig, W. E. Parsons, T. W. Stringer, Roderick Seal and J. M. McKee have been elected directors of the Vicksburg & Ship Island Railroad Company.

At a meeting of stockholders held at Grenada, Miss., May 21, the Grenada & Meridian Railroad Company was organized by the election of the following gentlemen as a board of directors: Messrs. Dr. J. F. Milton, W. B. Towns, W. B. Sherman and M. K. Myster, of Grenada; Mr. J. S. Reid and Colonel W. S. Bolling, of Winston County; Dr. W. W. Hart, of Montgomery; Mr. L. H. Ragsdale, of Meridian; and Hon. H. C. Greer, of Neshoba.

Mr. George Wolcott has been appointed a Division Engineer of the Texas & Pacific Railway, and will organize a corps and prepare for work at Pueblo, Colorado, going southward thence to the line of the road.

Mr. J. H. Parsons has been appointed Superintendent of the new "Lansing Division" of the Lake Shore & Michigan Southern Railway, with headquarters at Albion, Mich.

Mr. C. H. Pepper has been appointed Master of Transportation and Train Dispatcher of the St. Joseph & Denver City Railroad in place of J. D. Gunn, resigned.

At a meeting of the stockholders of the Pekin & Mississippi Railroad Company, at the Bemis House, Pekin, May 21, \$95,000 of stock being represented and voting, the following directors were elected: H. W. Kreider, F. H. Bradbury, Prairie City, Ill.; W. R. Hamilton, Peoria; John M. Finch, Dallas, Ill.; John S. Wykoff, Fairview, Ill. At a subsequent meeting of the Board, Dr. H. W. Kreider was elected President, W. R. Hamilton Treasurer, and E. B. Dunbar Secretary. Another meeting, claiming to be a meeting of stockholders, was held at the same time, at the office of D. C. Smith, Secretary of the company, and the following directors were elected: C. R. Cummings, Peter Weyrich, John B. Cohrs, J. H. Hamilton, John S. Wykoff. Subsequently this Board organized by the election of John B. Cohrs President, J. H. Hamilton Vice-President, Peter Weyrich Treasurer, and D. C. Smith Secretary. At this last meeting stock to the amount of \$400,000 was said to be represented, of which, however, it is asserted that only \$5,000 was genuine. During the progress of this latter meeting, stockholders claiming to represent a majority of the stock offered their votes, which were refused. These stockholders then held an election, and made choice of the same Board of Directors that had been chosen by the meeting at the Bemis House.

By a recent division of labor and offices in the Pennsylvania Railroad Company, Mr. Henry W. Gwinner, the General Passenger and Ticket Agent, has been made "Auditor of Passenger Receipts," and D. M. Boyd, Jr., before First Assistant General Passenger and Ticket Agent, has been made General Passenger Agent.

At the recent annual meeting of the American Institute of Mining Engineers in New York, the following officers were elected: President, Rossiter W. Raymond, New York; Secretary, Martin Coryell, Pennsylvania; Treasurer, J. Prior, Pennsylvania; Managers, Abraham



S. Hewitt, New York; G. W. Maynard, Troy; T. M. Drown, Philadelphia, and several others. Mr. Raymond, the President, is the United States Commissioner of Mining for the West, and editor of the *Engineering and Mining Journal*.

—At the annual meeting of the Peterborough Railroad, held at Nashua, N. H., May 27, the following board of directors was elected: James Scott, Granville; P. Felt of Peterborough; George A. Ramsdell, Solomon Spalding, Gilman Scripture, Josiah C. Graves, Albert McKean of Nashua; Clark, Albert Smith of Peterborough.

—At a meeting of the directors of the Springfield & Illinois Southeastern Railway Company, held at Springfield, Ill., May 22, the resignations of the following directors were received and accepted: A. D. Slayback, New York; John Prince, New York; Colonel Orland Smith, Ohio; Hon. Wm. P. Cutler, Ohio; Dr. Wm. B. Wilson, Florida. The board then filled the vacancies by the election of Messrs. Oscar Townsend, H. R. Hurlbut, H. W. Collins, T. P. Handy and George W. Norris. Of the new directors Mr. Townsend is President, Mr. Hurlbut, Vice-President, and Messrs. Collins and Parker directors of the Cleveland, Columbus, Cincinnati & Indianapolis Railroad Company.

—The directors of the Fort Wayne & Rochester Railroad Company, which was recently organized, are Messrs. John Arnold, W. B. Sterling, Francis M. McDonald and Elijah Merriman, of Springfield, Whitley County, Ind.; William Sturgeon, of Rochester, Fulton County; H. J. Connor, John Lawrence, John Yotter and J. R. Alliman, of Silver Lake, Kosciusko County.

—At the annual meeting of the Cedar Rapids & Missouri River Railroad Company, at Cedar Rapids, Iowa, May 15, the following directors were chosen: Oakes Ames, North Easton, Mass.; John B. Alley, Lynn, Mass.; Wm. T. Glidden, David P. Kimball, Frederick Nickerson, Joseph Nickerson, S. L. Thorndike and John M. S. Williams, Boston; John I. Blair, Blairstown, N. J.; D. C. Blair, Belvidere, N. J.; Charles A. Lambard, New York; Edward Johnson, Belfast, Maine; John F. Ely, Cedar Rapids, Iowa; Horace Williams and James Van Deventer, Clinton, Iowa. The board organized by electing Horace Williams, President; Frederick Nickerson, Vice-President; P. E. Hall, Secretary; John M. S. Williams, Treasurer; J. Van Deventer, Assistant Treasurer; David P. Kimball, Register of Stock; Geo. T. Crandell, Auditor. Executive Committee—Horace Williams, Joseph Nickerson, S. L. Thorndike, Frederick Nickerson and John I. Blair. This company's road is leased to the Chicago & Northwestern and forms a part of its line across Iowa.

—At the annual meeting of the Iowa Falls & Sioux City Railroad in Cedar Rapids, Iowa, May 15, the following were chosen directors: John B. Alley, Lynn, Mass.; Oakes Ames, North Easton, Mass.; P. S. Crowell, East Dennis, Mass.; Wm. T. Glidden, Boston; John I. Blair, Blairstown, N. J.; J. Van Deventer, and Horace Williams, Clinton, Iowa. This board organized by the election of Horace Williams, President; James Van Deventer, Vice-President and Assistant Treasurer; J. M. S. Williams, Treasurer; P. E. Hall, Secretary; Charles H. Clark, Register of Lands; Geo. T. Crandell, Auditor; P. E. Hall, Auditor of Land Department; Wm. P. M. Means, Register of Stock, and John B. Calhoun, Commissioner of Lands.

—There has been a reorganization of the Board of Directors of the Colorado Central Railroad Company, several directors having resigned and new men having been appointed in their places. The board is now composed of the following gentlemen: H. M. Teller, Central City; W. A. H. Loveland, Golden; C. V. Welsh, R. D. Hall and H. H. Given, Colorado; F. Gordon Dexter, Boston; Fred. L. Ames and Oliver Ames, North Easton, Mass.; T. E. Sickles, Omaha; J. B. Taft and T. J. Carter, Boston. The officers of the company are: H. M. Teller, President; Oliver Ames, Vice-President; E. H. Rollins, Secretary and Treasurer.

—The Denver Pacific Railway and Telegraph Company, at its annual meeting on May 21, elected the following Board of Directors: Messrs. R. E. Carr, John Pierce, C. S. Greeley, B. W. Lewis, Jr., J. E. Bates, F. W. Cram, J. P. Devereaux, D. A. Moffit, Jr., and A. Sayre. At a subsequent meeting of the directors R. E. Carr was elected President; John Pierce, Vice-President; R. R. McCormick, Secretary, and D. H. Moffat, Jr., Treasurer. Of this board Mr. Carr is President and Messrs. Greeley and Lewis directors of the Kansas Pacific.

—The new directors of the Texas & Pacific Railway Company, whose election we announced last week, is really very little different from the one chosen at the organization a year ago, when Marshall O. Roberts held a majority of the shares. The new members in the board of seventeen members are: J. Edgar Thomson, J. N. McCullough, W. C. Hite, and William C. Hall, who take the places of Moses Taylor, Marshall O. Roberts, Samuel J. Tilden, and George W. Quintland. Some of the latter, however, had withdrawn from the board before the close of the year. It is remarkable that most of the Board elected by Roberts before the close of the year were supporters of Scott. Most if not all the members of the present board are associated with Cass and Scott in the Southern Railway Security Company.

—The Sioux City & Pacific Railroad Company at a meeting in Cedar Rapids, Iowa, May 15, elected the following directors: G. M. Dodge, Council Bluffs; Horace Williams, James Van Deventer, Clinton, Iowa; P. S. Crowell, East Dennis, Mass.; Frederick Nickerson, S. L. Thorndike, Wm. T. Glidden, Boston; John I. Blair, Blairstown, N. J.; and D. C. Blair, Belvidere, N. J. Horace Williams was chosen President; James Van Deventer, Vice-President and Assistant Treasurer; P. E. Hall, Secretary and John M. S. Williams, Treasurer.

—The city taxes alone of the Central Pacific Railroad Company in Sacramento are \$10,656 this year, and the city taxes of some of its officers residing in Sacramento amount to about \$15,000.

## TRAFFIC AND EARNINGS.

—The receipts of the Toledo, Wabash & Western Railway for the first week of May were: 1872, \$97,886; 1871, \$84,856; increase, \$13,030, or 15½ per cent. For the second week of May its receipts were: 1872, \$109,319; 1871, \$93,167; increase, \$16,152, or 17½ per cent.

—The receipts of the Louisville & Nashville Railroad for the month of April were: 1872, \$233,673.90; 1871, \$198,344.39; increase, \$35,329.51, or 18 per cent.

—The receipts of the Erie Railway for the third week of May were: 1872, \$439,720; 1871, \$374,207; increase, \$65,513, or 17½ per cent.

—The receipts of the Lake Shore & Michigan Southern Railway for the second week of May were: 1872, \$314,635; 1871, \$258,227; increase, \$56,408 or 22 per cent.

—The receipts of the Toledo, Wabash & Western Railway for the second week of May were: 1872, \$109,319; 1871, \$93,167; increase, \$16,152, or 17½ per cent.

—The receipts of the Great Western Railway of Canada for the week ending May 10 were: 1872, \$21,965; 1871, \$15,942; increase, \$6,023, or 38 per cent.

—The receipts of the Grand Trunk Railway of Canada for the week ending May 11 were: 1872, \$35,400; 1871, \$30,200; increase, \$5,200, or 17 per cent.

## OLD AND NEW ROADS.

### Atchison, Topeka & Santa Fe.

This company's time table of May 20 shows trains running from Atchison over the new road to Topeka, and from Newton over the new branch to Wichita. The road is divided into two divisions, the "First Division" from Atchison to Emporia, 114 miles, and the "Second Division" from Emporia to Wichita, 100 miles. The terminus of the main line proper is at Newton, 27 miles north of Wichita, and the extension is going on from Newton southwestward. The stations from Atchison to Topeka, with their distances from Atchison, are:

Atchison	0	Grasshopper	35.8
Junction	6.2	Rock Creek	36.2
Stranger	9.2	Killmer's	42
Pardee	13.5	North Topeka	49.4
Nichols	30.3	Topeka	50.4

The stations on the Wichita Branch with their distances from Atchison are:

Newton	185	Valley Center	201
Sedgewick City	195	Wichita	212
Jeter	198		

Wichita is on the Arkansas at the point where a great part of the Texas cattle have crossed on their way to Abilene. The company expects large shipments of cattle from this point. It is now running a mail and a mixed train daily between Atchison and Wichita; a freight between Atchison and Newton, and a coal train between Topeka and Emporia. The country on a large part of the line is new but growing fast; and as the company owns a large amount of land in this territory, the growth is in every way profitable to it, giving it at once a market for its land and traffic for its road.

### Frankfort, Paris & Big Sandy.

A correspondent writes from Kentucky: "Bourbon County has voted by a heavy majority to give \$400,000 to the Frankfort, Paris & Big Sandy Railroad. In a few days Bath County will vote on a subscription of \$100,000 to the same enterprise. Scott County has already voted \$200,000, hence the friends of this road feel justified in saying part of it will be built this season."

### Lexington & Big Sandy.

The cars are now running to Winchester, Ky., on the Lexington & Big Sandy Railroad, and the track will reach Mount Sterling by the middle of June, and regular trains must be running to that place by that time or the road loses the county subscription of \$250,000.

### Kansas Central.

This narrow-gauge railroad is to be completed to Grasshopper Falls, about 30 miles west of Leavenworth, by the middle of June, and the company hopes to have the road completed to Holton, about ten miles farther, by August. Nearly 900 men are at work on the grading. Van Doren & Havens, contractors, advertise for ties six feet long for the western part of the line.

### Mayville & Lexington.

This Kentucky road has been completed and in operation for three months, and one of its officers informs us that it is attracting to it the heavy shipments from the Ohio River to the interior of the State. A branch line to the river will be built this season; also the branch to Flemingsburg (six miles) will soon be ready to let.

### Erie Railway.

A correspondent of the *Buffalo Commercial Advertiser*, writing from Niagara Falls, says:

"At Suspension Bridge the Erie is making extensive improvements. Grounds have been recently purchased by Mr. Hulet, the energetic Superintendent, and will be put into immediate use. The new passenger depot will be located on the south side of the road. The cattle-yards, which are already commenced, will be contiguous to the offices of the railroad and custom-house officials, which will be a good feature in the estimation of drovers. A building formerly occupied as a school-house is entirely remodeled into offices, in keeping with the other equipments. The bridge people are not quite so hard on the Erie as they were one year ago; but time and facts usually dispel prejudices."

### Boston & Albany.

This company has been making surveys for a new line from Westfield (10 miles west of Springfield) west to Lee, on the Housatonic Railroad, 13 miles south of Pittsfield, thence to connect with the Lee & Hudson Railroad, and with it forming a loop line from Westfield to the Boston & Albany Railroad near Stockbridge. A route is found by which the highest grade is 65 feet per mile, against 85 and 87 on the present line, and the distance from Westfield to State Line is reduced by it from 54 to 40 miles.

When constructed, it is probable that through traffic will take this route, being both shorter and easier than the old one.

### Alabama & Chattanooga.

"We are authorized," says the *Montgomery Advertiser*, "to state that the Governor has leased, terminable at ten days' notice, the Alabama & Chattanooga Railroad to the Mobile & Ohio Railroad Company. The Mobile & Ohio Company will run the road at its own expense, and pay to the State a certain proportion of what profits are made. The arrangement is temporary, and will not, we presume, continue for any length of time."

When first completed the Alabama & Chattanooga road was operated in connection with the Mobile & Ohio and the New Orleans, Mobile & Texas as a through line from New Orleans to Chattanooga.

### Erie & Niagara.

The *Buffalo Commercial Advertiser* of the 20th says: "Last week we announced the reopening of the Erie & Niagara Railway on the 18th inst. from Fort Erie to Niagara, but from information received to-day we are inclined to doubt the correctness of the assertion, as far as that end of the road is concerned running from Clifton westward. It is generally known that quite a contest had been going on between two rival organizations for the possession of this line of road, which resulted in favor of the Canada Southern. But there is yet a long contention between it and the Great Western, and that is the branch running from the junction to the depot at Clifton. To make eastern connections the Southern must use this branch, which it finds a difficult matter to accomplish. The claims of the Western, we understand, have been pronounced valid, so that in order to run between Clifton and Niagara with reasonable claims for patronage the Southern has yet to make terms with the former or open a new cut for a mile and a half. The authorities of the two roads met at Clifton this week to remove 'the little unpleasantness' if possible, but it is quite probable that, in order to connect with the Erie, which the Southern is very anxious to do, it will be obliged to do that which will involve no small expense and the loss of considerable time, and thus lose the greater part of the summer travel."

Reports have been afloat concerning the mutual understanding between the Southern and the Erie, but we think a glance at the intimate relations between the latter and the Great Western will dispel any such illusions. As far as their interests are concerned, we should judge they were identical, from the favors extended the Erie in the Western premises; and we cannot entertain for a moment the report that there is or will be any alliance between the Erie and Canada Southern railways, detrimental to the Great Western interests."

### Continental Railroad.

The *Tiffin (Ohio) Tribune* says:

"As has been previously announced, the contracts for the work on the road-bed to Chicago have been let. General Gibson and Mr. Rogers, of Freeport, Ill., have the contract for building eighty miles of the road between Tiffin and the State line. Both are good railroad men, and Mr. Rogers is a contractor of long experience. Their contract covers the earthwork, stonework and bridging. They expect to be ready to sub-let the work next week, and have bids already for over 30 miles of it. Most of these bids are from men who have done work on our other roads, together with some residing immediately upon the line of the Continental. Mr. Rogers reached this city to-day from a trip over the line with the engineers. Of course he is pleased with the shape the road is assuming. All the contractors are bound by the terms of the contract to have their work completed in nine months. The local aid is all secured, together with the right of way. Colonel Merritt, of Iowa, has the whole contract for furnishing the ties. General Gibson assures us that the road will be graded, bridged and ironed between Chicago and Tiffin this fall, and possibly to the Baltimore & Ohio east of Tiffin."

### Banta & Antioch.

The grading was nearly completed for this new California railroad on the 11th of May, and it was expected that rails would be laid to Antioch by the end of June.

### Lake Shore & Michigan Southern.

General Order No. 10 from the General Superintendent announces that new stations have been opened upon the northern line of the Toledo Division, and agents appointed, as follows, viz.: Port Clinton, Ohio, D. S. Henricle, Agent; Graytown, Ohio, L. B. Bailey, Agent.

### Warren & Sharon.

The engineers who have been locating this proposed road, which is virtually a branch of the Cleveland & Mahoning, report that the distance from Warren, O., nearly due east to the Pennsylvania line, is a little less than 18 miles, and the distance to Sharon will be about 20 miles. It is to be constructed this season from Warren to Vienna, about half-way.

### Bedford & Franklin.

It is proposed to construct a narrow-gauge railroad from Liberty, Va. (on the Atlantic, Mississippi & Ohio Railroad 24 miles west of Lynchburg), southwestward to Rocky Mount, the county seat of Franklin County, by a route whose length is reported at 58 miles, though by a direct route the distance is little more than 30. The country is very hilly, being just at the foot of the eastern slope of the Alleghanies.

### Northern Central.

This company has been surveying a route for a branch which it is proposed to construct from Troy (16 miles south of the New York line) northeast about 20 miles to Athens, on the Pennsylvania & New York Canal Railroad, and just within the forks of the Susquehanna.

### Sunbury & Lewistown.

There is talk of constructing a branch of this railroad from Adamsburg northeast 16 miles to the Lewisburg, Center & Spruce Creek Railroad at Mifflinburg.

[CONTINUED ON PAGE 235.]





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S. WRIGHT DUNNING AND M. N. FORNEY, Editors.  
W. H. BOARDMAN, Acting Publisher.

## CONTENTS.

Page.	Page.
ILLUSTRATIONS:	NEW PUBLICATIONS..... 235
Smith's Brake for Freight Cars..... 229	CHICAGO RAILROAD NEWS..... 235
Locomotive Cylinder Cocks..... 231	GENERAL RAILROAD NEWS:
Budd's Stay-Bolt Cutters..... 231	The Amalgamation of the Central of New Jersey and the Delaware, Lackawanna & Western..... 231
CONTRIBUTIONS:	Report of the Central Railroad of New Jersey..... 231
Frog and Switch Table..... 230	Elections and Appointments..... 232
Train Dispatching—Hindoo's System Too Much for the Wires..... 230	Traffic and Earnings..... 233
The Detroit, Owosso & Northwestern Railroad..... 230	Old and New Roads..... 233-236
The Ventilation of Cars..... 230	Locomotive Statistics..... 236
"Consequencing" and "Hindoo"..... 231	Annual Conventions..... 235
EDITORIALS:	MISCELLANEOUS:
Railroad Traffic in Iowa..... 234	Boiler Explosions..... 229
The Central of New Jersey..... 234	Cost of the Hoosac Tunnel..... 229
EDITORIAL PARAGRAPHS..... 235	Fast Time..... 229

## Editorial Announcements.

**Address.**—The RAILROAD GAZETTE will be printed for the present in New York; our printing house in Chicago having been destroyed. All communications, therefore, whether editorial or business, should be directed to the New York office. The proprietor will receive subscriptions and advertisements at his office in Chicago, Nos. 63 and 65 South Canal street, but letters should be addressed to New York.

**Correspondence.**—We cordially invite the co-operation of the railroad public in affording us the material for a thorough and worthy railroad paper. Railroad news, annual reports, notices of appointments, resignations, etc., and information concerning improvements will be gratefully received. We make it our business to inform the public concerning the progress of new lines, and are always glad to receive news of them.

**Articles.**—We desire articles relating to railroads, and, if acceptable, will pay liberally for them. Articles concerning railroad management, engineering, rolling stock and machinery, by men practically acquainted with these subjects, are especially desired.

**Inventions.**—No charge is made for publishing descriptions of what we consider important and interesting improvements in railroad machinery, rolling stock, etc.; but when engravings are necessary the inventor must supply them.

**Advertisements.**—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns our own opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

## RAILROAD TRAFFIC IN IOWA.

According to the laws of Iowa, the railroad companies of that State report annually to the State Treasurer their mileage, earnings, etc. The present Treasurer, Mr. Samuel E. Rankin, has compiled from these annual reports for the past ten years a small pamphlet of statistics which may be read and studied with profit, especially at this time, when there is at least a suspicion that we have been building railroads in some parts of the country before there is traffic enough to make them very prosperous.

Probably no State in the Union will be able to give railroads a larger traffic in the products of agriculture than Iowa. It is not only a very large State, but almost every acre of it is cultivable, and lack of timber, which distinguishes it beyond Illinois, adds to its cultivable area and increases the necessary traffic; lumber and coal being hauled long distances by rail when, if forests were abundant, there would be a diminished lumber traffic and scarcely any fuel traffic. The absence of waste land—land swampy, rocky, barren, or for any reason uncultivable—is very remarkable; and though there will doubtless be considerable tracts which will not be plowed for many years, if ever, nearly all of those will be mowed or pastured. Probably no equal area in America is capable of producing so large an amount of the products suited to its soil and climate.

Again, it is an advantage to the railroads that the great staples of this State—corn, wheat, cattle and hogs—are among the bulkiest transported; that is, bulky in proportion to the area on which they are produced. We have frequently called attention to the small amount of traffic supplied by cotton-growing districts. Two hundred pounds to the acre of ginned cotton is a good crop on most upland cotton plantations and much more than an average crop. It requires about a hundred acres of such a crop to make a car-load; while ten acres of an Iowa farmer's corn will make a heavier load, and twenty of twenty-five acres of wheat will fill a car. With stock the difference is not so great, but it is yet considerable. So we conclude that scarcely any country except one abounding in minerals—coal and ore—has the capacity for affording a larger traffic per mile from its products than Iowa; and, moreover, Iowa has considerable

coal, which is carried to almost every town in the State on a railroad line.

Presenting thus a promising field for railroads, nearly all of its lines first made were well placed and formed something like a system. That is, nearly all followed the prevailing current of traffic, which for nearly the entire State is east and west, and they were so located as not to interfere with each other, the distance between the lines being so great that each had a considerable territory on both sides from which to obtain traffic. There are four great and nearly parallel lines entirely across the State from the Mississippi to the Missouri, and one now completed about half way across, which are on an average thirty miles apart. Similar to these in direction and effect is the line of the Milwaukee & St. Paul, across the north-east corner of the State, and up to 1869 there were but three railroads, with an aggregate of 240 miles of road, which might not be counted part of this gridiron of east and west roads, either main lines or feeders.

At the close of 1868 there were twelve railroads, with an aggregate mileage of 1,448 miles in the State. The increase up to that time had been gradual, the miles of road built each year, beginning with 1863, being 27, 74, 120, 213, 168 and 220, respectively—the latter amount in 1868. Meanwhile an increase in average gross earnings per mile had been shown every year except one, and for 1868 they reached \$5,541.73.

Since 1868 there has been great activity in railroad construction in the State, 633 miles of new road having been built in 1869, 602 miles in 1870, and 342½ miles in 1871. The progress made in receipts for these years is shown by the following table from Mr. Rankin's report, to which we have added the difference in the receipts in 1870 and 1871, of the roads whose mileage was the same in the two years, with the percentages, an increase being marked + and a decrease —.

NAME OF COMPANY.	1869.	1870.	1871.	Per cent. of Inc. or Dec.
Burlington & Mo. R.	\$1,072,530.35	\$2,154,717.20	\$2,546,477.85	+489,760.65
Cedar Rapids & Mo. R.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Chicago, Iowa & Neb.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Dubuque & W.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Dubuque & Sioux City	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Chicago, Rock Island & P.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Des Moines Valley	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Des Moines & St. Paul	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Keokuk & St. Paul	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Cedar Falls & Minn.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Sioux City & Pac.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Kansas City, St. J. & C. B.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Burlington, C. R. & M.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
St. Louis & C. R.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Central Railroad of Iowa.	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Cedar Falls & St. Paul	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Des Moines & St. Paul	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Sabula, Ackley & Dakota	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Iowa Midland	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Burlington & Northwestern	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Des Moines & Indianola	1,261,027.66	1,665,167.06	1,879,540.55	+214,373.49
Total gross earnings.	\$10,409,950.70	\$11,923,332.94	\$11,813,567.79	-\$109,765.15
Gross earnings per mile.	\$7,193.37	\$8,447.30	\$8,300.28	-\$147.02

The reader will remark that we have seldom had occasion to use the plus sign in the next to the last column, and also that with an increased mileage in the State of about 13 per cent. there was an absolute decrease in receipts. He may not notice, however, that on the twelve roads whose mileage has not been increased since 1869 the falling off amounts to more than a million and a half—equivalent to about 14 per cent. This, too, it must be remembered, in a State of exceptional promise and with abundant room to grow, which increases in population constantly and should be growing very rapidly. But as one year may be exceptional, we will compare 1870 with 1869. The gross receipts of the ten railroads whose mileage was not increased during 1869 were about \$650,000, or about 7½ per cent. less in 1870 than in 1869. On the four railroads whose mileage was not increased in 1868, the receipts increased nearly \$600,000, or 13½ per cent.

We may conclude, therefore, that since the great increase in railroads in Iowa, the traffic has been seriously decreased; and that though the new lines have not yet secured a considerable traffic for themselves, they have in most cases taken something from the older lines—that, in fact, the growth of the railroads has been considerably more rapid than the growth of the State.

If from this it should be concluded that the Iowa railroads are generally unpromising properties, a serious mistake would be made. Doubtless some of them are, being unfortunately located; but most of the lines, more especially the older ones, are almost sure of a large traffic eventually; and the only event likely to cause any future decrease in receipts—or, rather, likely to prevent a large and rapid increase—is the continuance of the remarkable activity in railroad construction which has prevailed for the past few years, and which was itself occasioned by the very promising future of the State and of the existing railroads. That railroads will continue to be built is of course true; and it is also probable that some of them will be made before their time; but that the increase in the future will be equal to that of the past few years is not probable, and, if the roads do not make a better showing of earnings soon, will not be possible.

## THE CENTRAL OF NEW JERSEY.

Most of the figures and comparisons given in the report of this company for 1871 (published elsewhere) seem of little significance, because the company worked the Lehigh & Susquehanna Railroad for nine months of the year, nearly trebling its mileage, and the results of the operation of the two roads are in most cases given together, and compared with those of the Central alone for 1870. But if the inquirer will read the report through, he will find that there are in one place separate statements for the two lines. From this it appears that the Central's receipts in 1871 were \$4,470,729.74, as against \$4,393,514.12 in 1870, the increase being \$77,215.62, or about 1½ per cent. The items showing an increase are passengers, about \$16,500; merchandise, \$102,000; coal, \$5,500; while there is a decrease of about \$47,000 in miscellaneous receipts (mail, express, rents, etc.) The receipts are the largest in the history of the company, and a statement given in the report shows that for nineteen years every year but one (1867) has shown an increase over the previous year, notwithstanding the numerous fluctuations in the business and prosperity of the company and the extreme variability in the coal traffic, from which this road obtains nearly four-ninths of its gross receipts. It has now a traffic hardly exceeded in bulk by that of any American road, and exceeded in receipts by none. For 1871, the receipts on the Central and its branches in New Jersey were at the rate of \$44,500 per mile of road, and including the leased Lehigh & Susquehanna, making the average mileage for the year 240 miles, the receipts were \$28,500 per mile, which is only a little less than the earnings of the Pennsylvania Railroad, and is about \$2,500 more than those of the New York Central & Hudson River for the year last reported.

When the Pennsylvania Railroad Company ceased to encourage passenger traffic between New York and the West by way of this road—the famous Allentown Line—there were those who believed that the passenger traffic of the road would be seriously and permanently affected. Perhaps its through traffic was; but the company has cultivated its local and especially its suburban traffic so assiduously and so wisely that it now has a magnificent passenger business, that for 1871 being at the rate of \$11,000 per mile, which is more than double the passenger receipts per mile of the Pennsylvania Railroad, with its magnificent through business. This result has been attained by giving suburban passengers excellent cars, numerous trains and regular time, as well as reasonable fares. These attractions have within a few years built up the towns on the line of the Central with great rapidity, and thus the traffic so gained is sure to be permanent. Its advantages for local traffic are soon to be increased by an extension to Long Branch.

While the gross increase of traffic on the Central Railroad proper was small, that of its newly leased lines, the Lehigh & Susquehanna and its branches, have greatly increased. We have not the figures for the year, but for the nine months reported by the lessee the receipts were \$122,400 more than for the whole year 1870.

The agreement with the Delaware, Lackawanna & Western Railway Company recently made by the Central of New Jersey, the terms of which are published with the report, puts under one management a great system of railroads from New York northwestward, with an aggregate mileage nearly the same as that of the New York Central & Hudson River and the Erie, and only 200 miles less than the Pennsylvania Railroad Company operates directly. It is, however, hardly to be compared with them, as it is not particularly valuable as a route for through traffic from New York to the Great Lakes and the West, but has by far the largest part of its traffic on its own lines. That is, it depends very little for it on its connections. The Delaware, Lackawanna & Western is one of the largest of the anthracite coal carriers, in 1871 transporting on the 115 miles in Pennsylvania nearly 2,000,000 tons and earning \$3,351,484.36, more



than nine-tenths of which was from freight. (So reported to the Auditor-General of Pennsylvania.) Its leased lines extend across New York through Syracuse to Oswego, to Utica and to Ithaca, N. Y. The united companies will operate 893 miles of railroad, consisting of two distinct lines from Jersey City northwest to Scranton, a complete line to Lake Ontario at Oswego, and the various branches in the coal regions and New York, which give it access to the Erie Canal, Lake Ontario and the two great railroads of New York, and through these with nearly all the large towns of the State and the lake ports from which shipments are made to the Northwest.

THE SOUTHERN SECURITY COMPANY, it is announced, has leased or made a contract for a lease of the Western North Carolina Railroad. This road extends from Salisbury, on the North Carolina Railroad, 43 miles north from Charlotte and 239 miles from Richmond, Va., nearly due west in the direction of Knoxville 105 miles to Marion. The Southern Security had before lines in its control completing this route north to the Potomac and also a complete line from Memphis through Chattanooga and Knoxville to Bristol, on the Virginia border at the terminus of the Atlantic, Mississippi & Ohio Railroad, commonly known as "General Mahone's road." This latter road the Security is supposed to have had designs upon and to have tried to secure in many different ways, in order to complete its Memphis line, but so far without success. It is also supposed to have encouraged the proposed Norfolk & Great Western road—at least that part between Danville and Bristol—by which it would "flank" Mahone's road, and now there is a rumor that it will extend the Western North Carolina Railroad over the mountains to Morristown, Tenn., 42 miles northeast of Knoxville, and thus make the desired connection. To make such a line would require the construction of about 200 miles of railroad through a very difficult country, and the Danville and Bristol line would be just about as long and difficult. The latter, however, would unite the terminus of the Memphis & Bristol line to the Baltimore outlet of the Southern Security Company's line, which would be much in its favor if a choice were to be made between the two.

Another proposed outlet for the Memphis & Bristol line is the Shenandoah Valley Railroad, which the Pennsylvania Company has been fostering for some time, and which, if the complete design is carried out, will run from the Potomac terminus of the Cumberland Valley road southwestward near the western boundary of Virginia to Bristol or some point near it, for most of the distance being in the valleys between the parallel ranges of the Alleghenies. This would give a good line to Harrisburg, Philadelphia and the East, but not to Baltimore, nor would it utilize any of the lines of the Security Company.

WALL STREET having adopted Columbus, Chicago & Indiana Central shares as favorite counters in its little games, some financial journals have felt themselves called upon to explain why shares in a company which has not lately earned the interest on its bonded debt should be sold in the Exchange for 40 or so. The favorite explanation is that the Pennsylvania Company, controlling both this and the Fort Wayne road, has been turning its Chicago traffic from the latter to the former, thus immensely increasing its earnings. Now the facts are that the reports for 1870 and 1871 show that the earnings of the Columbus, Chicago & Indiana Central were not quite sufficient to pay the interest on the bonded debt (which is the guaranteed rental), and that no reports of earnings since that time have been published. It is quite probable that the earnings have been considerably larger than usual, as the earnings of the roads extending across Illinois south of Chicago, whether controlled by the Pennsylvania or not, have been exceptionally large for some months past; but there is no proof of it. As for taking traffic from the Fort Wayne road, that road in 1871 returned profits of more than a million and a half to the lessee, whose interest as between the two roads is to give the Fort Wayne road all the traffic possible, as the rental is fixed for that property. Since that year we have no reports of earnings to estimate by.

THOMAS A. SCOTT, so the report goes, was invited by the men who hold the Erie proxies to accept the presidency of that company at the approaching election. The reply to the informal offer indicated that "Barkis was willin'." But when the men of Erie came to particulars, it is said they made it a condition that Mr. Scott should give up his connection with the Pennsylvania Company! Of course Mr. Scott "couldn't see it," and as the Eriens were inexorable on that point they are not to have the great railroad man to rule over them.

Really, it seems something like either cool impudence or refreshing simplicity for one to ask such a man as Scott to give up his place in the Pennsylvania corporation for the management of the Erie. It is as if the people of Mexico, for instance, should request Queen Victoria, or the Emperor William to abandon their present dominions and accept the sovereignty of Mexico. Not that Erie—or Mexico, for that matter—is not much; but that the Pennsylvania with its dependencies, like Great Britain or the German Empire, is vastly more.

THE PENNSYLVANIA RAILROAD OFFICERS are credited by sundry journals with having worn themselves out by overwork. For men who are worn out they seem extraordinarily active and capable, however, and either the remnants of their vigor must be superior to the original stock of many men, or they have so organized matters that the machine will "go alone," or—which is the truth—the stories circulated are pure inventions, eagerly read by the public, and we doubt not, remembered and believed long after they have been proved false both by testimony and the abundant evidences of activity and vigor which these

active and vigorous gentlemen are constantly giving. It is a fact, however, that the President has gone to Europe, combining business with pleasure; that the Second Vice-President is really ill, and that the General Passenger Agent has given up his office to take another. Altogether, the company is not likely to fail just yet because its officers are invalids or imbeciles. The other companies, we imagine, will find them healthy enough for all practical purposes.

#### Annual Conventions.

The American Society of Civil Engineers, in Chicago, June 5.  
The American Railway Master Mechanics' Association, in Boston, June 11.

The United American Master Car Builders' Association, in St. Louis, June 12.

There will also be a convention of officers and managers of narrow-gauge railroads in St. Louis, June 19.

#### NEW PUBLICATIONS.

Van Nostrand's Engineering Magazine for June has two original articles of special interest to railroad engineers. One of these is "Standard versus Narrow Gauge," by Gen. Herman Haupt, in which the conclusion is that there may be a saving in construction of \$500 per mile, as compared with roads of standard gauge, and that narrow-gauge cars may be made to carry about a quarter of a ton each more than standard gauge cars of the same character, "on account of reduced weight of axles and cross-pieces." The other article is "Railroads in Peru," by Mr. F. J. Cisneros.

An article "On Testing the Value of Unguents," from the *Annual of the Royal School of Naval Architecture and Marine Engineering*, ought to be of interest to master mechanics and others who use lubricators, and do not always find it easy to test their value. "The Stability of Arches," translated from "Sonnet's Dictionary of Applied Mathematics," will be of interest to engineers in general, as will many of the articles.

The *Travelers' Official Railway Guide*, we regret to learn, was "burned out" by the recent fire in Philadelphia. We know by experience how to sympathize with such a misfortune, and our regret is the least bit selfish; for the *Official Guide* has become so complete and minute an index to the railroads of the country, that we are not willing to do without the June number even for the two weeks which, we are told, are likely to elapse before it can be issued. Meanwhile the misfortune to the proprietor is also a misfortune to the entire traveling community, to whom the *Guide* is invaluable.

The *United States Railroad and Mining Register*, of Philadelphia, began the seventeenth year of its useful career with the issue of May 25. It gives a large amount of railroad, mining and metallurgical news, and its original and selected articles on geology, mining and metallurgy, especially, are of unusual value, and the editorial writing frequently gives evidence of profound and elegant scholarship.

#### Chicago Railroad News.

##### Chicago & Northern Pacific Air-Line.

Articles of incorporation of the Chicago & Northern Pacific Air-Line Railway Company were filed at the office of the Secretary of State in Springfield, Ill., on the 24th of May. The incorporators are John C. Barnes, George E. White, George McGroves, James L. Anthony, New York; Nelson Ludington, Anson Stager, James R. Young, Edward G. Mason, Charles J. Barnes, Chicago. The proposed line of road extends from Chicago, through Cook and Lake counties, to the State line in the town of Richmond, in McHenry County, about 53 miles, where it will meet the line of the Chicago & Northern Pacific Air-Line Railway of Wisconsin, a company organized under the general law of the latter State about a month since.

The Wisconsin road, as projected, extends from the State line, in Walworth County, over the grade of the old Wisconsin Central (which the new company holds under the foreclosure sale of the latter road), through the towns of Geneva, Elkhorn, Whitewater and Jefferson to Portage City, in Columbia County, thence to Superior City or Duluth, the eastern terminus of the Northern Pacific Railroad, about 350 miles distant from the State line of Illinois, and a trifle over 400 miles from Chicago. A branch to St. Paul is contemplated.

This line, as proposed, will form the most direct route from Chicago to St. Paul and the Northern Pacific Railroad, the distance being shorter by many miles than the present lines. The capital of the Wisconsin company is fixed at \$8,750,000, and that of the Illinois company at \$1,250,000.

Captain Edward Ruger, the Chief Engineer of the Wisconsin company, has completed a survey to a point about 50 miles north of the Illinois State line, and reports over four-fifths of the grading on this section finished.

##### Michigan Central.

On the second day of June, this company will make a change of time for the day express trains between this city and New York, the effect of which will be to shorten the time between that city and Chicago one hour. The train which has heretofore left Chicago at 9 a. m. will leave after that date at 9:30 a. m.; the train which has heretofore arrived at 8 p. m. will arrive at 7:30. This arrangement reduces the time between Chicago and New York to 34 hours.

##### Illinois Central.

Last week this company put a special freight train on to accommodate the strawberry trade of Southern Illinois, and on Saturday last the train brought to this city 17 loaded cars, the total weight of whose contents was 168,000 pounds. These trains start from Cairo at 10 o'clock each morning, and arrive in this city at 8 o'clock the next morning, running at the rate of about 16 miles an hour. The strawberry region extends about 100 miles

from Ullin, 20 miles north of Cairo, on the south, to Centralia, and as the season terminates southward, the train starts from points further north. The strawberry crop is represented as a very large one, while the peach trees in the same section of country are as full of young fruit as they can be. The peach crop is expected to surpass very largely the crop of last season, and last summer, during six days in the latter part of the month of July, 182 car loads arrived in this city.

Mr. Joseph F. Tucker, the General Freight Agent, makes the following announcement concerning the running of a fruit train:

The fruit train will start from Cairo when the bulk of shipments warrant, and will stop only at stations where fruit is to be received or delivered.

##### RATES ON FRUITS AND VEGETABLES.

Between Cairo and Jonesboro to Chicago, 80 cents per cwt.  
Between Cobden and St. Johns to Chicago, 75 cents per cwt.  
Between Tamaroa and Central City to Chicago, 70 cents per cwt.

Between Odin and Mattoon to Chicago, 65 cents per cwt.  
North of Mattoon and between local stations, first-class rates, according to tariff.

Vegetables will be taken at 25 per cent. less than the above rates, when in lots of 1,000 pounds or upward, from one shipper to one consignee.

By freight trains at these rates unless tariff rates are lower, when tariff will be used.

Crates and packages which have been used for transporting fruit, will be returned on fruit train free of charge, if put up in packages and properly marked, directed and put on board by the owner; but the company will not be responsible for any loss occasioned in transporting or delivering such packages. Under all other circumstances freight will be charged on crates or packages as per tariff.

The company will not be responsible for delivery, and all fruit left at the close of business for the day, will be turned over to the warehousemen for sale on account of charges.

The running time on the Illinois Central road will be changed on the 2d inst. It was intended to make the change on the 26th of May, but the arrangements could not be perfected at that date.

##### Chicago & Alton.

The earnings of this road for the third week of May were \$117,499.17, while the earnings for the corresponding time last year were \$125,675.14, a decrease for the present year of \$7,175.97. This falling off is mainly in freight. The present is just the time of year when farmers are so busy they cannot find time to ship away their old grain. The passenger business remains about as it was a year ago. This company has its track laid on its branch—Louisiana & Missouri River Railroad—within a very few miles of Jefferson City, Mo.

By the new time table the Joliet and Dwight accommodation leaves Chicago at 4:50 p. m., instead of 4:10, and arrives at 9:20 a. m., instead of 9:40. The train leaving Chicago at 9:00 p. m. reaches East St. Louis at 8:00 a. m. and Kansas City at 9:30 p. m. The train leaving Chicago at 9:15 a. m. reaches East St. Louis at 9:40 p. m. and Kansas City at 6:50 a. m. The night express runs every day, and not with the exception of Saturday, as heretofore.

##### Chicago, Burlington & Quincy.

This company is continuing the work of double tracking the line from Chicago to Aurora. The injunction, of which mention has already been made, prevents the opening of a through passenger route from this city to Dubuque, for the present. It is hoped, however, that the matter will be settled before a very long period of time shall elapse.

##### Chicago, Rock Island & Pacific.

The southwestern branch of this road is beginning to have a largely-increased business. The recent connection with Leavenworth enables the road to run trains through to South-eastern Kansas, where there is at present much interest in the settlement of the Osage Indian lands. The emigration into the Osage country is very large, and, of course, this road feels the impulse in that direction.

#### OLD AND NEW ROADS.

[CONTINUED FROM PAGE 233.]

##### San Diego Railroad Companies.

The San Diego *Bulletin* of April 24 says that eleven railroad companies have been organized, whose officers contemplate making the bay of San Diego their terminus, to wit: The San Diego, Gila & Pacific; Memphis, El Paso & Pacific; Grand Tower, San Diego & Pacific; Southern Pacific of California; Southern Pacific of Texas; Southern Trans-continental; Texas Pacific; Atlantic & Pacific; Bay Shore, San Diego & Los Angeles; San Diego & San Bernardino.

When we come to sift these down, however, we find that the Memphis, El Paso & Pacific, the Southern Pacific of Texas, the Southern Trans-continental, and the Texas Pacific are now virtually absorbed by one corporation, the Texas & Pacific; that the Atlantic & Pacific proposes to make its terminus at San Francisco and not at San Diego, and that it is very questionable whether the Southern Pacific of California goes so far south on the coast.

##### Grande Ronde & Walla Walla.

Under the above title H. J. Meacham, Philip Ritz, D. W. Litchenthaler, Geo. Coggin and James Hendershott have filed articles of incorporation in Union County, Oregon. The object of this incorporation is to build a railroad and line of telegraph from some point in Grande Ronde Valley to Walla Walla. The capital stock is to consist of \$1,500,000, divided into shares of \$100 each. The principal place of business is at Le Grande. The company, it is reported, will ask from the General Government only the right of way for the road, but will solicit donations of land from private owners on the line to aid in the construction of the road.

##### Cairo & St. Louis.

In speaking of this road, the Cairo *Bulletin* says that the contractors have obtained all the money necessary to assure its construction, have purchased nearly enough iron, several locomotives and a number of passenger and freight cars. The work on the road is to be first-class, and it is the determination to make it a model of its kind.



## LOCOMOTIVE REPORTS, FEBRUARY, 1872.

Master Mechanics of all American railroads are invited to send us their monthly reports for this table.

NAME OF ROAD.	Number of Locomotives in service.	Number of miles operated.	MILEAGE.			NO. OF MILES RUN TO		COST PER MILE, IN CENTS.					AVERAGE COST OF		
			Passenger.	Freight.	Miscellaneous.	Total.	Ton of Coal.	Cost of Wood.	Cost of Oil.	Repairs.	Fuel.	Miscellaneous.	Coal, per ton.	Wood, per cord.	Oil, per gallon.
Burlington & Missouri River.....	58	40,394	64,647	26,403	131,444	37,01	40,31	14,02	5,28	9,42	0,78	8,23	23,67	3,50	..
Chicago, Rk. Island & Pacific (Ill. Div.)	78	39,121	122,977	3,949	167,038	44,67	..	17,62	4,04	6,98	0,56	6,73	18,31	..	..
.. .. (Iowa Div.)	91	63,451	118,671	25,446	207,568	40,31	..	14,70	4,68	7,83	0,65	6,93	19,92	..	..
Clev., Col., Cin. & Indianapolis.....	397	102	53,085	184,227	67,416	304,728	41,28	..	22,21	5,13	7,27	0,52	7,35	20,27	3,00
Illinois Central (Illinois Divisions).....	708,23	145	82,398	27,532	41,617	151,547	31,62	..	11,69	9,01	6,41	0,74	6,51	22,67	1,90
.. .. (Iowa Division).....	30	28,047	46,013	11,009	85,120	35,68	..	19,23	8,11	7,13	0,53	6,48	22,25	2,50	5,50
Leavenworth, Lawrence & Galveston.	18	19,253	12,204	6,110	36,569	69,36	..	27,49	2,85	5,88	0,52	7,19	17,14	3,65	5,00
Philadelphia, Wilmington & Baltimore	..	..	..	..	113,387	..	..	..	10,10	11,70	1,69	6,70	39,10	..	..
Pennsylvania (Philadelphia Division).....	129	65,098	210,340	9,355	275,393	31,26	..	17,34	4,30	5,90	0,80	..	11,00	..	..
.. .. (Middle Division).....	111	50,274	228,326	9,633	297,233	29,40	..	33,47	4,66	6,70	0,70	..	12,00	..	..
.. .. (Pittsburgh Div., E. End.)	74	8,340	135,126	1,706	135,872	32,73	..	11,91	8,70	8,20	1,10	..	18,00	..	..
.. .. (Pittsburgh Div., W. End.)	106	56,00	157,709	8,882	222,991	32,39	..	15,93	8,00	6,00	0,80	..	14,80	..	..
.. .. (Tyronne Division).....	26	10,775	21,685	2,883	44,863	28,37	..	25,77	2,30	6,70	0,70	..	9,70	..	..
.. .. (West Penn'a Div.).....	15	15,367	20,896	2,633	38,926	41,73	..	26,32	4,40	3,20	0,70	..	8,30	..	..
.. .. (Lewistown Division).....	8	3,582	7,639	1,118	12,340	36,32	..	21,01	3,90	5,10	0,60	..	9,60	..	..
Pittsburgh, Ft. Wayne & Chic. (E. Div.)	319,2	143	75,595	289,465	8,508	373,568	39,80	..	13,97	4,37	6,27	0,86	7,26	20,39	..
.. .. (W. Div.)	200	94	77,865	208,743	17,215	303,823	79,60	23,50	13,30	12,50	0,60	..	6,80	23,20	2,50
Rome, Watertown & Ogdensburg.....	..	..	27,189	22,435	7,631	57,244	37,22	32,57	23,68	6,29	12,42	0,51	6,85	25,67	..
St. Louis, Kansas City & Northern.....	383,38	67	60,066	127,573	50,800	238,439	36,59	..	18,00	8,11	8,20	0,50	6,50	23,30	2,75
Flint & Pere Marquette.....	..	..	28,472	37,796	13,685	79,953	..	50,07	27,33	3,16	8,99	0,76	6,41	19,32	4,50
Cleveland & Pittsburgh.....	..	..	..	..	174,856	55,88	..	20,72	6,55	4,86	0,74	..	7,31	19,46	2,20
Chicago & Northwestern.....	229	159,595	207,725	116,310	484,630	30,55	..	10,38	11,54	13,23	0,96	..	9,18	34,91	3,50
Kansas Pacific.....	..	..	62,113	70,646	56,594	189,353	44,62	..	16,34	7,62	9,71	0,57	6,51	24,41	4,25
Eric (Eastern Division).....	..	..	..	..	399,140	..	..	..	10,91	11,87	1,45	1,61	9,19	34,83	..
Louisville, Cincinnati & Lexington.....	..	..	32,854	31,392	5,333	69,589	..	10,53	2,17	15,65	0,91	0,68	8,35	27,66	..
Louisville & Nashville.....	78	54,709	120,040	6,159	160,899	..	..	11,81	7,25	12,66	0,72	0,91	9,10	30,64	4,20
Memphis, Clarksville & Louisville.....	6	1,600	7,634	1,680	10,914	..	..	26,09	11,10	10,44	10,30	0,67	3,13	8,71	32,95
Memphis & Ohio.....	19	19,000	25,905	7,965	46,850	..	..	31,50	10,36	11,73	11,69	0,83	0,92	8,31	32,98
Lake Shore & Mich. Sou. (Mt. So. Div.)	143	105,013	185,996	116,346	407,355	..	..	34,42	25,30	6,67	10,25	..	6,06	22,98	3,50
.. .. (Toledo Div.)	74	28,390	124,360	28,715	181,465	37,00	44,00	29,00	4,45	1,05	..	..	7,55	22,05	3,50
.. .. (Erie Div.)	89	29,610	132,789	45,360	207,759	40,00	22,00	15,00	6,64	9,75	..	..	6,62	23,01	4,10
.. .. (Buffalo Div.)	75	29,050	113,606	48,420	191,070	41,80	..	15,90	7,10	8,30	..	..	6,50	21,90	3,50

FOR THE YEAR 1871.

Flint &amp; Pere Marquette..... | 231 | 164,321 | 183,600 | 189,537 | 537,458 | .. | 62,88 | 40,75 | 4,00 | 7,15 | 0,66 | .. | 8,81 | 18,62 | .. | 4,50 | ..

The cars will run through from Cairo to St. Louis before the end of the present year.

## Cheshire Railroad.

The annual report of the directors of the Cheshire Railroad Company for the year ending October 1, 1871, shows the total earnings to have been \$787,815, and the expenditures \$630,166. Of the receipts, \$223,754 have been for passengers; \$330,589 for freight, and for express, mails and miscellaneous, \$33,462. Of the disbursements \$137,233 was expended for maintaining the road and buildings—including \$55,981 for repairs and \$43,261 for new rails; \$393,621 for traffic expenses, including \$40,591 for repairing locomotives, \$60,918 for repairing cars, \$24,000 for new engines, \$119,632 for fuel, and \$116,133 for salaries; and \$99,311 for miscellaneous expenses. During the year 147,274 passengers were carried, and 370,840 tons of freight. The total number of miles run by trains was 586,386.

## Central Pacific.

About a thousand men are working on the extension of the Oregon Branch of this road, and its completion to Shasta is promised within a short time.

## Cincinnati Southern.

Surveys for this road are now in progress on the ridge line between Cincinnati and Lexington, and, in addition to those already completed, two are in progress—one from Hustonville, Ky., (about 50 miles south of Lexington) southeast to Columbus, and thence south through Burkesville, Ky., Livingston and Sparta to Dunlap, Tenn.; and the other from Lexington, a little east of south through Richmond, London and Williamsburgh, Ky., to Coal Creek Station on the Knoxville road, 31 miles from Knoxville, and from Coal Creek by former surveys to and down the valley of the Sequatchie River.

Committees from the counties of Grant, Scott, Woodford and Mercer, Ky., have tendered the right of way through their respective counties to the board of trustees.

## Madisonville &amp; Shawneetown.

Warren County, Kentucky, has voted \$500,000 and Butler County \$100,000 in bonds, in aid of the proposed extension of this road to Bowling Green, Ky.

## Indianapolis, Cincinnati &amp; Lafayette.

The Receivers, Gen. T. A. Morris and Mr. M. E. Ingalls, have filed in the United States Circuit Court at Indianapolis, a statement of the receipts and expenses, together with the assets and liabilities of the road, embracing a period of ten months, and running from July 1, 1871, to May, 1872. The passenger earnings for the six months ending December 31, foot up \$341,014.31; freight, \$537,910.70; miscellaneous, \$23,864.18; making a total of \$902,789.21. The total expenses are \$653,573.54, leaving net earnings, \$249,215.57. During January, February, March and April of 1872, the passenger earnings amounted to \$193,770.74; freight, \$319,317.98; miscellaneous, \$40,888.51; making a total of \$553,977.23. The total expenses are \$372,425.87, which leaves net earnings, \$181,551.36. A recapitulation of the business for the ten months referred to, gives the total earnings, \$1,456,776.44; total expenses, \$1,026,049.41; leaving net earnings, \$430,727.03.

## Intercolonial Railway.

The commissioners appointed to construct this railroad (which is to extend from Truro, Nova Scotia, to Riviere du Loup, in the Province of Quebec, 118 miles east of Quebec, and will be 500 miles long) have made their annual report, from which it appears that the total expenditure has amounted to \$8,641,103, of which \$5,075,411 has been made during the fifteen months embraced in the report. A large amount of work during the fifteen months was done by means of employing a large staff of men during the short working season. All the contracts for the twenty-three sections into which the work is divided were being prosecuted, and so rapidly were some of the sections being completed that the commissioners confidently anticipate the completion by the end of the year of a total length of 204 miles, all of which will be in first-class condition to carry traffic, viz.: Riviere du Loup to

Metepediac road, 86½ miles; Pansic Junction to Amherst, 45 miles; Amherst to Truro, 75½ miles. The contracts entered into for rolling stock are for 42 engines, 250 box freight cars, upward of 300 platform cars, and some first and second-class cars. The total cost of management has been \$70,645; for engineering expenses, \$357,203; but considerable reductions had recently been made in the engineering department; for right of way and expenses connected therewith, \$211,979, and on Moncton workshops, \$57,315. The commissioners state that the whole of the works have been executed in a very thorough and substantial manner, and it is believed that there is no railway upon this continent upon which the masonry will be superior to it, if it equals that upon the Intercolonial. They have every expectation that the line will be in running order by the end of 1873.

## Kansas Pacific.

The Lawrence Journal says: "The Kansas Pacific Railway Company have planted trees this spring at all the principal stations of their road, beginning at Brookville and ending at Ellis. This is a good idea, and will make a trip by rail across the Plains much more agreeable than a ride of 300 miles without seeing a shrub. If this experiment is successful, the Plains may yet be of some benefit to mankind."

## International Bridge.

At the recent meeting of the Grand Trunk Railway Company, Mr. Potter, the President, gave the following account of the terms on which the Great Western is to join in the construction and use of this new bridge across the Niagara above Buffalo: "The principle of that agreement is settled. The details remain to be filled up, the principle being this—that the two companies share the entire risk of construction, with the extras involved, and join in all the liabilities of the bridge, bridge capital, and the repairs and maintenance of it, and become equal partners in the property."

## Missouri, Iowa &amp; Nebraska.

The track of this railway is now completed to Lancaster, Mo., 18 miles west of the recent terminus at Memphis, and within a few miles of the St. Louis, Kansas City & Northern Railway.

## Lake Shore &amp; Michigan Southern.

General Order No. 13, from the General Superintendent, dated May 20, announces that this company has taken possession of that portion of the Northern Central Railway of Michigan which lies between Jonesville and Albion, and will operate it hereafter under the name of the "Lansing Division."

Mr. J. H. Parsons is appointed Superintendent of the Lansing Division, with headquarters at Albion, Mich.

## Relation of Power to Speed.

Prof. Thurston, of the Stevens Institute of Technology, while recently determining the power, etc., of an engine driving a set of fan blowers, found the power required to vary almost precisely as the ¾ power of their speed.

## Ashtabula, Youngstown &amp; Pittsburgh.

This company filed a certificate of an increase of capital from \$1,000,000 to \$1,500,000 in the office of the Secretary of State of Ohio, at Columbus, May 24.

## St. Louis &amp; Iron Mountain.

This company is now receiving 1,000 tons of iron rails from Marietta, Ohio, and 1,500 tons of steel rails from Griswold's works at Troy, N. Y., besides several thousand tons from England. The company has just had 2,000 tons re-rolled at the Vulcan Iron Works.

## St. Paul &amp; Pacific.

The Minneapolis News of recent date says that it is announced, apparently by authority, that the construction of the Brainerd Branch from Sauk Rapids to Brainerd is indefinitely postponed.

## Pana, Carlinsville, Carrollton &amp; Clarksville.

At a recent meeting of this company resolutions were adopted locating the road in Greene County. Messrs. Jacob Bowman, L. S. Eldrid and H. L. Clay were ap-

pointed a committee to receive the right of way from Pana to Carrollton. It is intended to put the road under contract at once. Col. J. B. Nulton, of Greenfield, Ill., was elected a director, in place of David Wright, of Carrollton, who has resigned.

## Chicago, Dubuque &amp; Minnesota.

The track-layers on this road finished their work to the Minnesota line May 20. The work will be left there for the present, and the men transferred to the Chicago, Clinton & Dubuque Railroad.

The grading for the Chicago, Dubuque & Minnesota road, it is said, will be completed from the Minnesota State line to La Crosse before the close of the month.

## Tilden &amp; Sparta.

This company proposes to construct a railroad about 15 miles long from Tilden, a station of the Belleville & Southern Illinois Railroad 43 miles southeast of St. Louis, southeast to Sparta, the county-seat of Randolph County, Ill. Arrangements have been nearly completed for the grading. There are coal mines on the line.

## Brownville &amp; Nodaway Valley.

This company proposes to construct a railroad from a point opposite Brownville, Neb., northeast to an intersection of the Burlington & Missouri River Railroad at Villisca, Iowa, a distance of about 60 miles. The proposed line is almost exactly parallel with and about 20 miles southeast from the Red Oak & Hamburg Branch of the Burlington & Missouri Railroad. There is talk, however, of extending it north of Villisca.

## Salt Lake &amp; Pioche.

Of the route of this projected narrow-gauge road, the Salt Lake Tribune says that the first important point after leaving Salt Lake will be Stockton. Thence the road will run through East Canon, Camp Floyd and Pentic, and down the Sevier Valley, on the west side of the river and lake. From Sevier Lake the direction is southwest through the Star districts in Beaver County to the line of the territory, entering the State of Nevada near the point where the Salt Lake & Pioche wagon road now crosses the line. Lincoln County, Nev., in which the town of Pioche is situated, has subscribed \$300,000 in bonds to build the road to the State line.

## Topeka, Fort Scott &amp; Memphis.

Fort Scott papers report that the contractor, Mr. L. D. Saxton, of Philadelphia, who took the contract a few months ago, is about to begin the construction of this narrow-gauge railroad.

## The Great Baltimore Tunnel.

The progress of this great work was somewhat delayed during the winter, the weather being extraordinarily severe and preventing work, it being for the most part not under ground, the excavation being made from the surface and filled in after the masonry is completed. Now a large force is engaged at almost every point on the line where the work is not completed. Of the 6,000 feet of the tunnel, five different sections, measuring in the aggregate 1,800 feet, have been completed, and the work progresses at the rate of about 100 feet per week, and work is to be begun directly at several new points. About three-fourths of the excavation is completed, and it is believed the whole will be ready for trains early in 1873.

Considerable damage has been done to buildings undermined, most of which have been purchased by the company. Springs encountered at numerous points have made necessary considerable effort and expense to remove the water, three engines being employed for this purpose.

This tunnel will connect the Northern Central with the Baltimore & Potomac Railroad, and enable trains between the North and the South to run through the city at good speed. It will have a double track.

## Kent County Railroad.

The contractor, it is reported, will finish the road to Belair next month; also finish the branch to Chester River, and apply for a charter at an early day to make a road from Belair to some point on the Chesapeake Bay, so as to open a direct communication with Baltimore.

## Baltimore &amp; Potomac.

Washington papers report that work on this company's depot, in Washington, on the ground concerning which there was a contest in Congress recently, is begun, and that a large force will soon be laying the connecting tracks.

## California Pacific.

The Vallejo Recorder says of this road that for months work has been comparatively suspended and the train to Knight's Landing has been run at most unreasonable hours. Passengers are compelled to take the river route to Sacramento. The break in the road is only for the short distance of twelve miles and it is said that it could be repaired for \$15,000. Under these circumstances it is singular that the company remains reticent in regard to its plans.

## Southern Pacific of California.

The San Bernardino Guardian says that the surveying party on this road, just returned from the Colorado, have found the highest point on the line of survey to be the summit of the San Geronimo, 2,750 feet above the level of the sea, and the lowest, in the lower end of the Cabezón valley, near Fink's Springs, 223 feet below the level of the sea.

## International Bridge.

Recently the New York Central & Hudson River Railroad Company laid tracks on the approach to this bridge in Buffalo in such a way as to obstruct the approach intended by the Grand Trunk to connect with the Erie. Since that time, by order of the Buffalo Common Council, the Street Commissioner of the city removed the tracks, and the Grand Trunk has laid one as it originally intended.

## Duanesburgh Railroad.

This road, from Schenectady southwest to Duanesburgh, on the Albany & Susquehanna Railroad, about ten miles, is now almost completed. Track is being laid through the city of Schenectady to a junction with the



Troy road, and it is expected that the road will be ready for the running of trains in two weeks. Arrangements are in progress by which the road is to be leased to the Delaware & Hudson Canal Company, to which company the road will be of value, as affording a connection between their Albany & Susquehanna line and the Rensselaer & Saratoga road, shorter than the present route by way of Albany.

#### Belvidere Delaware.

The Pennsylvania Railroad Company has leased this New Jersey railroad, which extends from Trenton up the Delaware River 67 miles to Belvidere, opposite Manunka Chunk, and is operating it as part of a line from Philadelphia to Oswego, N. Y., and other places in New York. Trains run through from Philadelphia to Belvidere, and there passengers take the Delaware, Lackawanna & Western Railway, and this is the only change between Philadelphia and Oswego.

#### New Castle & Franklin.

The company purposes the construction of a railroad in Western Pennsylvania from New Castle, on the Erie & Pittsburgh road 50 miles northwest of Pittsburgh, northeast 60 or 70 miles to Franklin, in the oil region. The second installment of ten per cent. of the capital stock of the company is payable on the 15th of June.

#### The Pennsylvania's "Low-Grade" Road.

The Renovo (Pa.) Record says the route of the Bennett's Branch Railroad has recently undergone a slight change. "Instead of running to the mouth of Mahoning River, it is now to be run to the mouth of Red Bank Creek, which increases the distance between five and seven miles, but at the same time avoids a tunnel of over a mile in length, and saves the railroad company over a million dollars in the construction of the road." The location to the mouth of Red Bank was made many months ago, however.

#### Northern & Southern West Virginia.

Lewis County, West Virginia, voted on the 6th ult. in favor of a subscription of \$150,000 to this railroad. The engineers are now surveying the route for this road between Clarksburg and Weston. Harrison County was expected to vote for subscribing \$200,000 to the enterprise.

#### Lancaster & Reading.

The directors of this company report that the farmers ask so high a price for the right of way for their narrow-gauge railroad that they have concluded to survey a new line in hope of finding a more hospitable country.

#### Whitewater Valley.

The survey for the new cut-off or extension of this road from Valley Junction to North Bend is now about completed.

#### North Pacific Coast.

A San Rafael, Cal., date, of May 16, says: "The survey of the North Pacific Coast Railroad is completed. The distance from Sausalito to Walhalla River is 115 miles, according to the engineer's report, and the cost of constructing the road is estimated at over \$2,500,000. Vice-President Platt assures our citizens that the road will be pushed through to a speedy completion."

#### Colorado Central.

The Denver News of May 22 says that it has been decided to construct this road from Julesburg to Golden as fast as men and money can accomplish the work, provided the promised aid is given by Boulder and Weld counties. Work on the unfinished mountain section is also to be pushed forward. There has been a recent change in the direction, by which Union Pacific directors have the control.

#### Green Bay & Lake Pepin.

The Green Bay Advocate says that a contract has been let for clearing, grubbing, grading and tying this road from Grand Rapids, on the Wisconsin River, to Dexter-ville, on the Yellowstone, 14 miles, and men are already at work on the contract.

#### Waynesburg & New Holland.

Contracts have been let for the construction of this road, which forms a western extension of the Waynesburg Branch of the Pennsylvania Railroad.

#### Texas & Pacific.

The bill lately passed by Congress requires the company to begin work at the San Diego end of the road within a year, that ten miles at that end should be completed within two years, and twenty-five miles every year thereafter until the road is completed. Mr. James A. Evans, late Chief Engineer of the International Railroad of Texas, is appointed to take charge of the engineering on the Pacific coast. The company has also sent engineers to Pueblo, Colorado, who, it is supposed, will go to El Paso to begin work.

#### Decatur & State Line.

The contract recently let to Darley & Nicholl, of Hennepin, Putnam County, Ill., included the sections from the Rock Island road at Bremen southward to a point five miles south of the Kankakee River.

#### Atchison Bridge.

It is reported that the bonds for this bridge have been negotiated, and that construction will proceed forthwith.

#### Oregon & California.

This road has been completed to Estes station, 40 miles beyond Eugene City, making the entire distance from the East Side depot (Portland), 164 miles. From Eugene, construction trains run daily to the end of the track carrying passengers and mails to connect with the stage line. Regular passenger trains will be put on when the road is completed to Oakland, which point it is expected will be reached by June 1.

Beyond Oakland the surveys have been completed to the Rogue River Mountains. This range of mountains constitutes the most formidable obstacle to the progress of the road. It separates the valleys of the Umpqua and Rogue Rivers and the latest surveys made, show that it will be necessary to construct two tunnels and several

long stretches of trestle work. The summit of the Rogue River Mountains attains a height of 2,400 feet, and it is intended to overcome this in a stretch of twenty-five miles. This will render it necessary in some places to use grades of over 80 feet to the mile. Both ends of the road are being pushed forward with energy and spirit, and it is hoped that the railroad connection between Portland and Sacramento will be completed in less than two years from the present time.

#### Northern Pacific.

The Kalama (W. T.) Beacon says that work is progressing favorably on the Pacific end of this road. A steamer is to be put on the upper Cowlitz, to run as a ferry between Pumphrey's and the end of the twenty-five miles, until the road is completed to and across the Cowlitz, which will probably be about September 1. From New York 1,372 tons of iron has just arrived, and another cargo was expected shortly.

#### Railroads in Peru.

In an article in the June number of *Van Nostrand's Engineering Magazine*, Mr. F. J. Cisneros, a South American engineer now resident in New York, gives the following account of the railroad system of Peru. Most of these have been put under contract by the government directly since 1867. There are now in the republic the following 28 railroads, some in operation, some in process of construction, and the rest nearly completed:

Miles.	Miles.
Arequipa to Puno.....232	Lima to Pisco.....145
Arica to Tacna.....39	Madrigal to Ascope.....28
Callao to Oroya.....130	Mollendo to Arequipa.....107
Chancay to Cerro de Pasco.....120	Cerro de Pasco to Pisco.....15
Chimbote to Huancayo.....173	Pacasmayo to Guadalupe.....14
Eten to Ferrenafe.....22	Pacasmayo to Magdalena.....63
Huacho to Sayan.....36	Paita to Pisco.....63
Ilo to Moquegua.....63	Pisco to Ica.....42
Iquique to Puno.....45	Pisagua to Sal de Obispo.....35
Jollaca al Cuzco.....37	Tacna to Puno.....201
Lima to Callao.....85	Trujillo to Eten.....118
Lima to Chancay and Huacho.....89	
Lima to Chorrillos.....7	
Lima to Magdalena.....3	

"The whole length of these roads is 2,310 English miles, or 3,716.80 kilometres, of which about 500 kilometres were in operation at the end of last year, viz.: from Eten to Chiclayo, from Lima to Chancay, from Lima to Callao, from Lima to Chorrillos, from Pisco to Ica, from Mollendo to Arequipa, from Tacna to Arica, from Iquique to Norria, from Lima to Cocachaca, and from Cerro de Pasco to Sacrafamilia.

"Many local exigencies have prevented the completion of all these lines, but everybody in Peru understands the advantages of having a net of rails throughout the territory. Peru possesses extensive forests with valuable timber, rich mines and fertile land, separated from the coast by high mountains, making the transportation of their productions so expensive that nobody considers them as an element of productive trade. Of course, railroads will develop all these riches, and will pour them into the foreign market.

"The railroad from Tacna to the frontier of Bolivia will be very useful to this State, a country so abounding in mineral and vegetable wealth. Some foreign speculators have undertaken the construction of this road, and the Peruvian Government will give about \$6,000,000, the third part of the capital needed.

"Bolivia will also profit, through Lake Titicaca, by the construction of a railroad from Arequipa to Puno.

"All these projects, when carried to execution, will considerably increase the prosperity of Peru, and will finally communicate by connecting the interior lines, the shores of the Atlantic with those of the Pacific Ocean. Until now nothing has been made to connect the interior lines; but the communication with the Atlantic would be an easy undertaking by prolonging the Lima & Oroya Railroad to Acobamba, Fuerte, San Roman and Mairo, hence to the confluence of the River Pachitea and Ucayali. From this river to the Amazon, navigation is very easy.

"Another way of reaching the Atlantic would be by the prolongation of the Juliaca & Cuzco Railroad. Urubamba River, which passes near Cuzco, is not easily navigated from Mision to Mainiqui, but from here to its mouth many travelers assure us that navigation is entirely safe. Between Cuzco and Mainiqui there are 210 miles; both places being united, the southern part of Peru will have an easy communication with the Atlantic. We are almost sure that both projects will be carried out, although great expense must be incurred on account of the obstacles of the surface, because that part of the country possesses many valuable riches, and Bolivia needs that communication for her foreign trade."

#### Springfield & Illinois Southeastern.

There has been a recent change in the directory of this company, reported elsewhere, by which four of the directors (including the President and Vice-President) of the Cleveland, Columbus, Cincinnati & Indianapolis Railroad Company are introduced into the board, and it is reported that Stillman Witt, S. H. Mather and Lucien Hills, of Cleveland, have taken a large interest in the company with them. This indicates that there may be an alliance between the Southeastern and the "Bee Line," in which case eastward bound and St. Louis traffic would leave the latter at Panama and pass over the Indianapolis & St. Louis line. This gives as good a route as any, perhaps, for east bound traffic from the part of the Springfield & Illinois Southeastern north of Panama (88 miles) and a fair one for the part south of Panama (140 miles) and an indirect route to St. Louis from all parts of the line.

#### Northern Pacific.

This company has filed its route through Montana, and the Commissioner of the General Land Office has accordingly ordered the lands to be withdrawn from market. The road enters the territory at or near the intersection of the forty-seventh parallel with the eastern boundary; thence southeasterly, following the Yellowstone River to the Bozeman divide, over which it passes; thence north of Bozeman City and Hamilton down the Gallatin, crossing the Gallatin River at Gallatin City; thence up the Jefferson River to Big Hole, and following that stream for a short distance; thence through the Deer Lodge

Pass; thence down the Deer Lodge, Hell Gate and Missoula rivers; thence southwesterly, leaving the territory on the north side of Clark's Fork of the Columbia, about twelve or fifteen miles north of the intersection of the forty-eighth parallel with the boundary of the territory.

The Chief Engineer of the Northern Pacific Railroad writes to the *Helena Herald* that the exact route through Montana will not be determined before next winter. He adds: "I will visit the Pacific coast before returning to Helena, but my parties will be there in May. I wish you good people of Helena would get that North & South Railroad built soon. It would be a great comfort to me to know that I could reach Helena by rail that way. Its construction would in my opinion, benefit our railroad when it comes along. No railroad can be built in Montana that will not help in some way the Northern Pacific."

#### Gulf Branch, Atlantic & Pacific.

The engineers engaged in surveying this line have been over a route from Sabine Pass, on the Gulf, at the southeast corner of Texas, north by west through Beaumont, Homer, Tyler, and Paris, to the Red River about a hundred miles west of the Arkansas border, and not far east of the crossing of the Missouri, Kansas & Texas road, evidently with the intention of making a junction with the main line of the Atlantic & Pacific near the center of the Indian Territory. Such a line would make a good route from the Gulf to San Francisco (with the Atlantic & Pacific completed), but not to St. Louis and the country north and northeast of it, and would be of doubtful utility, unless the Indian Territory should be opened for settlement, in which case it would probably at some day have a considerable population on its entire route, which might give it a good traffic without reference to its connection with the Atlantic & Pacific. It was originally proposed to make the road from a point near the southeast corner of Missouri nearly due south across Western Arkansas and Eastern Texas to the Gulf, without ever entering the Indian Territory.

#### Logansport, Crawfordsville & Southwestern.

It is reported that this company has leased the 20 miles of the Evansville & Crawfordsville Railroad from Terre Haute northeast to Rockville. This gives the Southwestern a complete line to Terre Haute, and will put both lines in better shape for traffic than before.

#### Burlington & Southwestern.

The company hopes to have its line completed to Unionville, Mo., about 25 miles from its present terminus at Moulton, by September.

#### Cincinnati & Cumberland Gap.

People from Western Kentucky have been trying to interest Cincinnati in a project for constructing a railroad from Paris, Ky., on the Kentucky Central Railroad 80 miles south by east from Cincinnati, in the same general direction through Mount Sterling to Cumberland Gap, a distance of about 140 miles. Such a road, whatever else may be said of it, would be almost without competition for the traffic of the country on the line.

#### The Mauch Chunk Switchback.

This railroad up Mount Pisgah, in one of the most picturesque districts of America, is to be operated this season as a passenger road, with cars constructed for the purpose, the trains running every few minutes. The road was constructed for coal traffic, but the construction of the Nesquehoning tunnel has made it unnecessary for that purpose, and as the place is become a resort for tourists; and as the road in itself is a curiosity and the view from Mount Pisgah magnificent, it is likely to be much used.

#### Delaware River & Lancaster.

The engineers have been making a survey of this road, and it is said have found a favorable route. The road is to run from Lancaster to Phoenixville, and thence to the Delaware River, and is to be continued to New York by the projected Delaware, Pemberton & New York Railroad, should the latter road ever succeed in getting itself built.

#### Baltimore & Ohio.

The *Cumberland Times* says that several of the large coal companies in the George's Creek region are negotiating for a branch of this road from Piedmont to Lonaconing, about eight miles. The coal companies are desirous of obtaining an outlet for their product independent of the road owned by the Consolidation Company, the heavy freights on this line driving them to seek a new outlet. The coal companies ask the Baltimore & Ohio to build and equip the road, they guaranteeing to ship all their coal over it, at a rate to be mutually agreed upon.

#### Annapolis & Elk Ridge.

Col. George S. Marsh, the new Superintendent of this road, has been over the entire road with N. Goldsborough, civil engineer, and will present to the directors at their next meeting an estimate of the cost of refitting the road. It is the intention of the company to lay an entire new track over the road.

#### National Railroad.

The National Railroad Company, which proposes to build a road from Washington, D. C., to Harrisburg, Pa., by the most direct route practicable, has been chartered by the State of Maryland, and now asks of Congress for a bill to authorize their road to enter the District of Columbia. The act of incorporation, as passed by the Maryland Legislature, names as incorporators B. L. Jackson, Henry D. Cooke and A. R. Shepherd, of the city of Washington; D. H. Gaither, Washington Bowie and Frederick Stenton, of Montgomery County; Augustus Riggs, John A. Dorsey and William B. Matthews, of Howard County; John E. Smith, John K. Longwell and Charles W. Hood, of Carroll County, Md. The capital stock of the road is fixed at \$3,000,000, in shares of \$50 each.

#### New York & Chicago Air Line.

The certificate for the incorporation of the New York & Chicago Air Line Railway Company in Ohio, was filed at Columbus May 18. The incorporators are James Aiken, Lee A. Hall, John T. Salter, Abner Taylor, Thomas



Snell and J. P. Prescott, and the capital stock is to be \$5,000,000. The road is to begin on the line between Ohio and Indiana, where the dividing line between Steuben and De Kalb Counties, Indiana, touches that line, and run to the Pennsylvania line between Trumbull and Mahoning counties, Ohio.

#### Decatur & State Line.

This company has exchanged the name, which if not a misnomer was at least not descriptive, for that of "Chicago, Decatur & St. Louis."

#### Illinois Western Extension.

Articles of incorporation of this company were filed with the Secretary of State of Illinois May 20. The line of this proposed road begins at the town of Kankakee and extends northwestward through the counties of Kankakee, Grundy and La Salle to Mendota. A branch is also proposed, leaving the main road near the west line of Grundy County and extending westerly through the counties of La Salle, Putnam and Marshall, to the town of Henry. The capital stock of the company is \$500,000, and its principal office is to be at Kankakee. Much of the proposed line is very near that of the Plymouth, Kankakee & Pacific.

#### Aiken & Spartanburg.

A company has been chartered to construct a railroad from Aiken, S. C. (16 miles northeast of Augusta, Ga.), a very little west of north across the State to Spartanburg, which is on the line of the Atlanta & Richmond Air Line, and within 15 miles of the North Carolina border. The distance is something more than a hundred miles.

#### Port Royal & Augusta.

At the recent annual meeting of the stockholders of the Georgia Railroad Company the question of indorsing the bonds of the Port Royal Railroad Company was referred to the board of directors with power to act. The *Augusta Chronicle and Sentinel* says that at a meeting of the board of directors of the Georgia Railroad Company, held in that city May 21, after a long discussion, a resolution to indorse the bonds of the Port Royal company to the amount of half a million of dollars was passed. When finished the Georgia Railroad is to control and operate it, and also to have a controlling interest in the Savannah & Charleston Railroad. A large force is now at work on both ends of the Port Royal road and additional labor is being secured. Forty-eight miles of track have been laid, and cars are running to a point 22 miles west of Yemassee. Ten miles of track have been laid since April 24, and it is hoped that the road will be open by October 15 next.

#### St. Louis & Iron Mountain.

This company is preparing to transfer loaded cars across the Mississippi River at St. Louis. An inclined plane is being built for that purpose south of the river Des Peres. A track is also being laid to East St. Louis, on the east side of the river. This arrangement will greatly facilitate the transfer of freight. This company is also laying a double track between St. Louis and Carondelet.

#### New Orleans, Little Rock & St. Louis.

This newly-organized company proposes to build a road from Little Rock to New Orleans, via Camden, Ark., and Alexandria, La., with a branch from Homer, La., to Shreveport.

#### Des Moines Valley.

With regard to the foreclosure of the second mortgage bonds of this company, a correspondent of the *Keokuk Gate City* says:

"In 1857 this railroad executed a mortgage on the road from Keokuk to Des Moines, known as the first mortgage, for something over \$2,000,000. In 1868 it executed a second mortgage, known as the land-grant mortgage, which was a first mortgage on the road from Des Moines to Fort Dodge, and was also second mortgage from Keokuk to Des Moines.

"In April, a suit was filed on the Chancery side of the United States Circuit Court, at Des Moines, for the foreclosure of the second mortgage, and the trustees of the first mortgage were made parties to the suit, as were also the Des Moines Valley Railroad Company, and one Hamilton, a brakeman, who recently recovered a judgment against the road for personal injuries in the amount of about \$4,680.

"One newspaper has made a statement that certain persons appeared for the stockholders, etc., etc., but all this is, as yet, guesswork, though it is doubtless understood, by the parties moving in the matter, how certain parts of the programme will be filled.

"The second mortgage trustees, in their bill, claim that money realized from their mortgage has been expended in betterments, repairs, &c., on that part of the road over which the first mortgage is a prior lien, and that for so much so expended they should come in *pro rata* with the first mortgage.

"If this is insisted on there will probably be quite a contest over this issue, and some talk is current of a contest over other issues, involving developments of an interesting character.

"The case cannot possibly come on for a hearing at the present term of the United States Court nor has it been continued as was stated in the *Register*."

"It is barely possible that the case may be tried in October. It may linger until May, or it may be finished the Lord knows when.

"In the meantime the road will probably run as at present, unless a Receiver should be appointed, or unless an active summer's work, or some financial raising of the wind, should enable the company to pay off the interest due on the bonds."

#### Boston, Concord & Montreal.

The twenty-sixth annual meeting of the stockholders of the Boston, Concord & Montreal Railroad was held at Plymouth, N. H. The committee selected last year to devise some plan for consolidating the different classes of stock into one, reported that it is desirable to make the consolidation, and submitted the following plan: "The whole capital of the corporation to be represented by a

single class of stock, that stock to be apportioned to stockholders in place of the stock which they hold, on this basis: Three shares for every two shares of preferred stock, one share for every two shares of new stock, and one share for every five shares of old stock; and new certificates are to be issued accordingly on the surrender of a corresponding number of shares of the present classes of stock respectively."

If this plan be adopted, the whole amount of stock thus apportioned to the stockholders will be \$1,562,000, and the committee are confident the income of the road will be sufficient to insure regular dividends at the rate of \$4 per share per annum, on that amount, and the prospects of the road are favorable for an increase in the future. It was voted to accept the report, and that the directors be empowered to carry said measure into effect as they deem proper; also, to unite the Boston, Concord & Montreal Railroad with the White Mountain Railroad, and to increase the capital stock \$2,000,000; also, to authorize the directors to issue bonds not exceeding \$200,000, to be secured by mortgage, for the extension of the road to Colebrook. The question of the lease of the Meredith & Conway Railroad was referred to the directors with full power.

#### Knox & Lincoln.

At a meeting of the directors of this company held in Rockland, Me., May 15, it was voted to extend the road to tide-water, and proposals will be advertised for without delay.

#### Sale of Cincinnati & Indianapolis Junction Railroad.

At the November term, 1871, of the United States Circuit Court for the District of Indiana, a suit was brought against the Junction Railroad Company by Morris K. Jesup and J. F. D. Lanier, of New York, trustees for the foreclosure of the company's first mortgage bonds, amounting to \$1,200,000, and for the recovery of some \$100,000 interest on the same, past due. At the same time, in the same court, Joseph C. Butler and Foote, trustees of the second mortgage bonds, amounting to \$800,000, brought suit for their foreclosure, and for the recovery of \$150,000 interest thereon. These suits were consolidated and further proceedings continued till the present term of court, the road being all this time in the hands of W. D. Griswold as receiver. The company having been adjudged bankrupt, the case was brought to a hearing before Judge Davis, at Indianapolis, May 23, and a decree of sale was issued directing W. D. Griswold to sell the road for the benefit of the bondholders, and bring the proceeds into court for equal distribution.

The legal name of this corporation is "The Junction Railroad Company." Its road extends from Hamilton, O., on the Cincinnati, Hamilton & Dayton Railroad, 25 miles north of Cincinnati, west by north to Indianapolis, 98 miles; with a branch from Connersville, Ind., 42 miles from Hamilton, northwest to Newcastle, 25 miles; the latter being operated now by the Fort Wayne, Muncie & Cincinnati Company.

It is reported that three railroads will probably bid on the sale—the Marietta & Cincinnati, Cincinnati, Hamilton & Dayton, and Indianapolis, Bloomington & Western; the first and last for connections, and the other to save the money it has put in the road. The purchase by the Marietta & Cincinnati (which is itself owned by the Baltimore & Ohio) would give the Baltimore a line to Indianapolis, whence probably enough it could get connections to Chicago without building one.

#### Peterborough Railroad.

At the annual meeting of this New Hampshire company in Nashua, N. H., May 27, the lease of the road to the Nashua & Lowell, executed on the 6th of May by the directors, was ratified. The contract for building the road has been awarded to David Cram, of Boston.

#### Omaha & Northwestern.

The engineers are surveying a line up Silver Creek, thence to Bell and Logan creeks, in Washington County, Nebraska.

#### King's Mountain Railroad.

This road, which extends from Chester, S. C., on the Charlotte, Columbia & Augusta Railroad, northward 22 miles to Yorkville, near the North Carolina line, has recently changed hands and is now under the presidency of Maj. George W. Melton. Its northern terminus will be on the Atlanta & Richmond Air Line, and it can be operated conveniently in connection with the latter road.

#### Augusta & Hartwell.

The annual meeting of this company was held recently. The engineer reports the cost of the 120 miles surveyed at the very moderate sum of \$17,500 per mile for construction and equipment. It is represented that after ten miles of the road is completed the State will indorse the company's bonds at the rate of \$15,000 per mile. The proposed route is from Augusta up the Savannah River (but some miles from the stream) in the direction of Rabun Gap, through which a connection with Knoxville is hoped for.

#### Hawkinsville & Eufaula.

The following subscriptions have been made to this proposed new Georgia railroad: by Dooly County, \$50,000; Americus, \$100,000; Webster County, \$45,000; Stewart County, \$60,000; Quitman, \$10,000.

#### Atlantic & Pacific.

The *San Francisco Bulletin* says that the survey of this road follows the line of the coast from San Francisco south to Pajaro Valley. The distance by this line is 100 miles, or exactly the same as by way of San Jose and Gilroy. The belt of country along the coast, though rough, is very productive and the lumber resources are very great.

#### New Orleans, Mobile & Texas.

It is reported that this company contemplates the early construction of a branch from New Iberia, by way of Petit Anse or Avery's Salt Island, to Abbeville.

#### Elko & White Pine.

Recent Elko dates say that work on this Nevada railroad is shortly to be commenced, sufficient money to insure

the construction of the road having been placed at the disposal of the company. The road is to be of narrow gauge.

#### Territorial Railroads.

Among bills pending in Congress for the incorporation of companies for the construction of railroads in the territories and the granting to them of the right of way across the public lands, are the following:

For the Great Salt Lake & Colorado River Railroad Company, which proposes to build a line from Salt Lake City, up the valley of the Jordan, and down the Rio Virgin and the Colorado River to Fort Yuma, where it will strike the Southern Pacific Railroad.

The Utah Northern Railroad Company proposes a line from Corinne up Bear River, to form a link in the projected system of roads to connect Utah with Montana and Idaho. It has some miles of track laid.

The Great Salt Lake & Portland Railroad, a bill to incorporate which has become law this session, is to run from a point on the Central Pacific Railroad in Northern Utah, across Idaho and Oregon to Portland.

The New Mexico Central Railroad, a north and south line, is to run through New Mexico from Santa Fe, down the Rio Grande to El Paso.

The New Mexico & Gulf Railroad is projected from Santa Fe, down the Valley of the Pecos River, south-easterly through Texas to Galveston.

The Dakota Grand Trunk Railroad is intended to run from the Iowa line eastward to Yankton and Springfield, Dakota, with a branch running up the valley of the Dakota River to a point on the Northern Pacific road. The projectors contemplate extending the main line west from Springfield up the valley of the Niobrara River to Fort Laramie on the Union Pacific Railroad.

#### Montgomery & Eufaula.

The *Eufaula Times* of a late date says: "We are reliably informed that the Montgomery & Eufaula Railroad Company has not gone into bankruptcy, as was currently reported on our streets on Saturday and Sunday last. Our informant stated that a petition was filed in the United States District Court at Montgomery to have a receiver appointed, whose duty it shall be to appropriate the earnings of the road toward paying off the floating debt *pro rata* among the creditors. The object of the petition is to prevent the road from being forced into bankruptcy by impatient creditors. It was granted, and Col. A. J. Lane, President of the road, was appointed receiver."

#### South & North Alabama.

The *Montgomery Advertiser* says: "Work on this road is now being very rapidly prosecuted, and those in charge are determined to put it through by September 1. There is now only a gap of 65 miles between the present termini on the north and south side of Sand Mountain. Twenty miles of this portion of the road is to be completed by June 1. No further work will be done on the Black Warrior bridge until the completion of the road to that point. The bridge has two abutments and two piers, and will be of the Fink truss pattern, 118 feet in length and built of iron. The trestle approaches will be 600 feet in length."

#### Hanover Branch Railroad.

The annual report of this company, whose road, extending from the Northern Central Railway west to Hanover, Pa., is only 12½ miles long, is a very good statement of what can be done with a short local line, with careful and honest management. The capital account gives the cost of road, real estate, rolling stock, etc., at the present time (it was built 20 years ago) as \$272,868.50, which is at the rate of \$21,830 per mile. The company owns, besides material, etc., \$36,000 in the stocks and bonds of connecting roads. Its capital stock amounts to \$116,850, and there is no bonded debt, that having been paid out of the profits, which stand recorded in capital account, at \$229,615.13. The following is a statement of the operations of the last fiscal year, ending March 31, 1872:

RECEIPTS.	
From through freight.....	\$39,799 66
From local freight.....	1,228 49
	\$41,019 10
From passengers.....	18,517 70
From Adams Express Company.....	333 36
From United States mails.....	650 00
From interest on loans.....	1,727 69
From rents.....	430 66
From materials sold.....	6,428 97
Earnings of the Hanover Branch Railroad proper.....	\$69,187 48
To which is to be added receipts—	
For working Gettysburg Railroad.....	\$12,371 55
For working Littlestown Railroad.....	2,665 30
	15,036 75
Total receipts.....	\$84,224 23
The expenditures were—	
Transportation.....	\$36,750 31
Maintenance of road and buildings.....	11,850 33
Taxes on dividends and United States taxes.....	3,332 04
Contingencies, office expenses, &c.....	638 86
General Superintendent.....	600 00
Salaries and expenses of board.....	1,228 00
	54,399 54
Balance.....	29,824 69
Balance in treasury from last year.....	36,884 24
Total.....	\$66,708 93

The expenses were about 64 per cent. of the gross receipts, and the net earnings were equivalent to 25 per cent. of the capital stock. A ten per cent. dividend was made, half as much was expended for new construction, rolling stock and other additions to the property, and an investment equal to about 20 per cent. was made in the stock and bonds of connecting railroads, though part of this came from a previous year's balance. Altogether the stockholders should be very well satisfied with their property. The connecting roads which this company is assisting are the Frederick & Pennsylvania Line, which is an extension of its leased Littlestown Railroad from Littlestown (two or three miles from the Maryland line,) southwestward to Frederick, Md., about 30 miles, and the Bachman Valley Railroad, from a point on its line southward 13 miles to Ore Bank, Md., through hematite iron ore deposits.